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Vol. XIX, No. 1
January, 1941

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Table of Contents

● COMPLETE NOVEL	
REMEMBER TOMORROW By HENRY KUTTNER.....	87
● COMPLETE NOVELETS	
CITADEL OF SCIENCE By ARTHUR J. BURKS.....	14
SECRET OF THE COMET By RAYMOND Z. GALLUN.....	50
● THRILLING SHORT STORIES	
THE MAD MOLECULE By ALFRED BESTER.....	29
THE GREEKS HAD A WAR FOR IT By KELVIN KENT.....	36
THE ROBOT BEASTS By OTIS ADELBERT KLINE.....	68
THE CRYSTAL INVADERS By JOSEPH J. MILLARD.....	78
HISTORY CLASS, 2133 A. D. By FREDERICK ENGELHARDT.....	111
● SPECIAL FEATURES	
SCIENTIFACTS By MORT WEISINGER.....	47
SCIENCE QUIZ A FASCINATING KNOWLEDGE TEST.....	66
● OTHER FEATURES AND DEPARTMENTS	
THE READER SPEAKS.....	6
HEADLINERS IN THE NEXT ISSUE.....	49
SCIENCE QUESTIONS AND ANSWERS.....	116
THE STORY BEHIND THE STORY.....	118
LOOKING FORWARD.....	120
SCIENCE FICTION LEAGUE NEWS	
● ON THE COVER	
The cover painting by Gabriel Mayorga depicts a scene from Joseph J. Millard's story, THE CRYSTAL INVADERS.	

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I Trained These Men



Chief Operator Broadcasting Station

Before I completed your lessons, I obtained my Radio Broadcast Operator's license and immediately joined Station WMPG where I am now Chief Operator.

HOLLIS F. HAYES
327 Madison St.
Lapeer, Michigan

Service Manager for Four Stores

I was working in a garage when I enrolled with N. R. I. I am now Radio service manager for the M— Furniture Co. for their four stores.



JAMES E. RYAN
166 Second St.
Fall River, Mass.

\$15 A Week Extra in Spare Time

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JOHN WASIKO
97 New Cranberry
Hazelton, Penna.

\$200 to \$300 a Month in Own Business

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ARTHUR J. FROELICH
300 W. Texas Ave.
Gooch Creek, Texas

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The Reader Speaks



CONSIDERING the fact that we think this department is one of the most important in this, or any, book, it looks as though we sadly neglect it at times. This apparent negligence is due to a number of reasons which we will neither explain nor alibi now. Let it ride that we head pilots went into a huddle and decided to give this department a shot of atomic power.

Whether she's going to explode like an over-loaded cyclotron and blow back in our faces, or shoot ahead on a true and smooth trajectory, we don't know. That depends on you space rovers of science fiction. Anyway, we're going to take out more time from other duties and mix it up briskly with you. We have an old space dog on our staff who is just the hearty to lay into you, the crew. Did you read the latest issue of CAPTAIN FUTURE and note how Sergeant Saturn went through the mail bag?

We thought he was pretty good, too. So here we officially turn command of this department over to Sergeant Saturn, the grizzled space dog of the ether ways!—THE EDITORS.

WELL, blow up my space suit and call me Fatty, if this isn't a swell spot to put me on! No fooling, these swivel-chair pilots have no idea what actual spatial navigation means. Lucky my rocket jets are in good blasting order. (I'm going to scout around for a new fuel; hot air doesn't work so well in the cold of outer space.)

Anyway, here goes. In this department from now on we'll take anything apart and put it back together again (maybe) that you space rats want to tackle, from blitzkriegs to biscuits, from Atoms to Adams, from sardines to solar systems—yes, and from artists to authors. So, adjust your gauges, settle yourselves in your acceleration hammocks, and blast off.

A rocketeer by the name of Bob Lowndes cuts loose with the first battery of rockets. I'm not going to argue with him right now as I am busy plotting our general course. Here's his letter; you guys take him apart.

T.W.S. TAKES THE STAND

By Robert W. Lowndes

Have you really stopped to consider what a ghastly shock it must have been to the steady reader of stf in general, and T.W.S. in particular, to have picked up the September, October, or November issues of the magazines, suspecting no ill, and find covers thereon

drawn by an artist who knows how to portray people? If a dozen law-suits have not been filed by the beleaguered parents of dozens of fans now suffering nervous breakdowns, then you are indeed fortunate. What will happen to Bergey, this heretic? I suggest police protection; otherwise a mob of outraged fans, who have, these many years, found it right and proper that the covers of fantastic fiction magazines should bear fantastically drawn humans, may descend upon him and do him much hurt. A saga should be sung for his daring, but I'd rather not be in his shoes.

As for the story, "Colossus From Space"—if originality and smooth treatment were a capital offense, Brother Johnson would be perfectly safe so far as this tale is concerned. And if capable illustrating brought heavy fines upon the artist in question, friend Morey could count his bank-notes in serenity, so far as contributions in the October and November issues are concerned. Marchioni, on the other hand, would have to stand long and exacting trial; his human figures for "The White Brood" are mediocre enough, but those monsters are dangerously artistic and pleasing. Perhaps he could get off with a strict warning and general lecture.

Note: "Upward Bound," "One Way Star-Ride" and "Worlds of Tomorrow" to be investigated; serious charges of high quality, originality in spots, and upgrade entertainment value leveled against them. Readers, beware.

Note b: Authors of "Via Mercury" and "Man About Time" to be warned; stories dangerously close to readability.

Note c: Clean bill of health to "Waters of Wrath" and "Murder Asteroid." Editor to be commended for carrying a series on forever and ever; this helps to eliminate what otherwise might be a good impression.

Item: on the persecution of bug-eyed monsters. Let the fanatics rave; we fans know what we want. Bigger and better bug-eyed monsters. Drawn by artists who can make them snap your finger off when you touch the magazine. (Wesso and Paul used to do them pretty well; Brown's have been so anemic, I don't wonder that the complaints rolled in by the boatload.)

Levity aside, here's one fan who's really amazed at the improvement (all around) in T.W.S. since last we read an issue from cover to cover. Don't get excited—I didn't say it was good. But there has been an improvement.

(Continued on page 9)

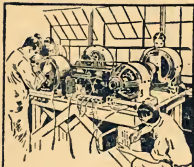
In this department we shall publish your opinions every month. After all, this is YOUR magazine, and it is edited for YOU. If a story in THRILLING WONDER STORIES fails to click with you, it is up to you to let us know about it. We welcome your letters whether they are complimentary or critical—or contain good old-fashioned brickbats! Write regularly! As many of your letters as possible will be printed herein. We cannot undertake to cater into private correspondence.

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EARNINGS

One man in California earned over \$1,600 per month for three months—close to \$5,000 in 90 days' time. Another writes from Delaware—"Since I have been operating (just a little less than a month of actual selling) and not the full day at that, because I have been getting organized and had to spend at least half the day in the office, counting what I have sold outright and on trial, I have made just a little in excess of one thousand dollars profit for one month." A man working small city in N. Y. State made \$10,805 in 9 months. Texas man nets over \$300 in less than a week's time. Space does not permit mentioning here more than these few random cases. However, they are sufficient to indicate that the worthwhile future in this business is coupled with immediate earnings for the right kind of man. One man with us has already made over a thousand sales on which his earnings ran from \$5 to \$60 per sale and more. A great deal of this business was repeat business. Yet he had never done anything like this before coming with us. That is the kind of opportunity this business offers. The fact that this business has attracted to it such business men as former bankers, executives of businesses—men who demand only the highest type of opportunity and income—gives a fairly good picture of the kind of business this is. Our door is open, however, to the young man looking for the right field in which to make his start and develop his future.

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(Continued from page 6)

tioned amazing improvement.—2574 Bedford Ave., Brooklyn, N. Y.

Outside of the fact that Robert seems to have had his generators hooked up backward so that his spatial craft flies like the whiffenpoof, he covers a lot of territory. So you don't like bug-eyed monsters on the covers? Or do you? Your reversed rockets have me a bit confused, lad. And I've tried pandemonium on every planet and planetoid in the System.

But after this comparatively mild take-off, let's dig down into the old mail sack for a secondary blast.

TRACY TALE TOPS

By Art R. Schnert

I read with rather doubtful sincerity the Tracy tale, due mainly to the vigorous plug in the current *Starbuck*, but it was as good as a sure thing to find it as good as I could like to see somebody, but Sinclair Lewis, wrote a story as to how America was conquered by the Japanese. The title of the book, *The Japanese Problem*, is the theme of Tracy's novel seems to take it for granted that America will be invaded and conquered by the Japanese. The book is a weak stuff for a patriotic reader to follow. Especially the part about America being invaded and conquered. In spite of the above, the book was a good read.

Second spot in my ratings goes to the cover—a no-monster cover. Shows that reader opinion does go for something after all.

Third place goes to Gilles. The quite obvious solution to the fuel problem really gave this installment a kick. No, I didn't think of the solution either.

Reader Anderson's letter gets fourth notch—boy, can he sling words.

Bond and Burks come next with their filler stories, although there was something of a new theme in Bond's. Burks pulls a "Turn-about" and sends a cave man into the future. Quite novel.

"The Tomb of Time" was good. I prefer Kuttner's "Hollywood-on-The-Moon" series to anything he's done as yet.

Next month's line-up sounds good. You will notice I didn't rate Wells' or Ley's efforts, because I don't read articles, and the Marchioni illustration ruined "White Brood" for me. If that Arlan gal has the brains to fill the head Marchioni gave her, she must be a mental giant!

The monster in the illustration for "White Brood" looked like a cross between a caterpillar, an octopus, a steam shovel's mouth, and a hyper-active case of the D.T.'s. Marchion must have suffered to conjure up that thing.

Schomburg is still your best artist. So I will expect you to use more Schomburg and less Marchioni and Wesso.—791 Maury, Memphis, Tenn.

Well, the impetus from this shot swings us

(Continued on page 10)

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(Continued from page 9)

more or less onto our general course. So the art boys come in for a panning. I wonder what you would think, Pilot Schnert, if I told you that Marchioni did the murals at Pelambar, the pleasure city of Mars. While, as for Wesso—well, I'm not going to tell you, but we are glad you like Schomburg, anyhow. You boys ought to know our art director. Sometimes he hates them all.

And, speaking of art and bug-eyed monsters, cut in your radiophones on this.

THE EYES HAVE IT!

By Martin Alger

Here I am again, with a threat this time. If you don't do something about those covers I'll turn my SEPTOBERMOTCOSP loose on you in a super-bltz! The contents of the mag may improve or decline but the covers remain the same. And now the evil influence is spreading to STARTLING STORIES—I refer to the Jan., March and Sept. issues. Here we have bug-eyed monsters of the most insidious type. However, for utter awfulness nothing can compare with the two BEMs on the August T.W.S. They were worse than those on the first issue of T.W.S. I am tempted to expel my organization to include the prevention of green-faced, balloon-headed, tentacle-armed, spindic-legged monsters!

It is nice to have a change but I can't say that I think Berkeley is any better than Brown, or is he Brown under a new name? The November cover sure looks like Brown's style. But at least there were no BEMs on it! Did it occur to you that his Derklans on the Sept. T.W.S. look like those rubber animals that Goddyar makes for street parades? The November cover is not so bad, though I doubt that dinosaurs were bright blue or purple.

The stories have been rather good; I enjoy the Pete Manx and "Vie" yams. Gallium's "Tangled Paths" reminded me of the old days of s-f. I don't know how to express it, but his work has a style unlike that of any other author. I wish to put in a word of praise for Clark Ashton Smith's little gem, "The Great God Awto." Here is a story that is truly unique, screwy and different.

Are you still giving cover paintings for contest ideas? If so, here is an idea, not so much for a contest as for a regular feature for the mag. Each month set aside one or two pages on which to run science articles written by the readers. These could have a maximum length of one page and would be paid for just as would be the work of a professional writer.

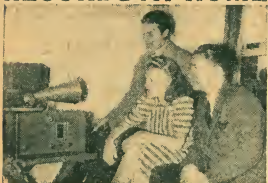
As you no doubt know, there are many s-f readers who are in some way connected with science. Just among the fans that I know up here there are several who are "on the inside" of professions that would be of interest to many readers. And the prospect of getting some compensation would be a real incentive. Besides, most of us like to shoot off our own work. How about it, ed? I hope this gets me an illustration, yes even a Brown cover. I'll put it up as an inspiration to all new members of the SEPTOBERMOTCOSP. Well, so long till next time.—Box 520, Mackinaw City, Michigan.

Nice going, Martin. What you say about the bug-eyed babies of September's TWS has more than a modicum of truth. They do look rather lugubrious, don't they? And speaking of the rubber animals for parades, you should have seen the last Macy parade down Broadway here in New York. It looked as though Gerry Carlyle was making a triumphant entrance with her latest cargo from the void.

Well, drop me on Jupiter and call me Heavy, if the very next grab out of the mail

(Continued on page 12)

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(Continued from page 10)

sack doesn't bring a reader reference to Gerry to light. I know you won't believe the coincidence (it's the truth) but go ahead and swallow the fumes of the next blast.

PUTTING US UNDER OBSERVATION

By Carl H. Anderson

Your November try is your best in some time, though still nothing to drool all over one's bib about.

For one thing, the novel section seems to be undergoing a slow degeneration. The last three or four have not held the pace set by *Blinder* and *Williamson* earlier in the summer. Tracy's latest is representative of the trend. The plot was not pure science fiction, the action was routine, and the propaganda angle definitely frowzy.

Among other things—I notice:

That Dorene Arian, for all the incredibility of a female space-yarn, is as good as the Carlyle wench after whom she is obviously patterned. But unless done by a Weinbaum, romance in science fiction sure is dopey.

That Kuttner's little opus was the seemingly unavoidable blot on the issue. Why Hank wasted a character with the potentialities of Max Molin on a ratty little short is more than I know. He was beautifully portrayed.

That Ley's article presents this knowledgeable fellow at his best. More stuff along this line by Ley and others will do much toward lifting the mag to a more respected position.

That Giles is as good as ever.

That Bond, while his characters are a bit too breezy and debonaire for reality, is the freshest thing that's cropped up in *Wonder* in some time. But his glibness bothers me.

That Alex Schomburg, in his pic for the Bond project, again proves that he has a real staff imagination. Remember his amoeba-out-line job for Gregory's story some time back? His treatment is really unique.

That Arthur J. (Manape the Mighty) Burks once again sallies into prehistory for material and once again comes up with a typically Burksian yarn. His efforts at recreating the outlook and motivation of a cave-man set one to wondering, if nothing else, just what the devil Cro-Magnon did talk about. Who ever did the illustration for this—Morey?—made a sad batch of old Worm-Head Doo. His legs are wretchedly misproportioned and his puss no more primitive than that of a fair to middling leather-pusher.

That the "Tomb of Time" demonstrates even more forcibly than the Arian job the utter superfluity of a woman where no woman is needed. Not that Arthur's yarn would have been good without the she—its action and characters were too stereotyped to be good under any circumstances. It was just a passably decent story—the kind you forget by next month.

But women, and especially the woman who invariably says as the climax nears, "Oh, Thornton, let's leave this place. Can't you feel that aura of menace settling around us? It's in the air, and the light. The very ground is squoogy with it. Something alien. Alien and—deadly! Oh, Thornton, we should never have landed on Ganymedee. . . ." That makes me spit vitriol.

All of which brings us up to my two regular gripes—the cover and the blatt-column.

The letters were better this month again—they fluctuate regularly from their nadir to a rather mediocre zenith, completing the cycle once every three or four issues. Since the November contributions were generally decent, Heaven knows what atrocities will burst upon us next month.

As for the cover . . . I believe I have aired my opinions once before. Maybe twice before. They have not changed.

You know, Ed, that monster-on-the-cover complex of yours could be adjusted by a little decent psychiatry. It wouldn't be so expensive either. You could probably chisel the brain-plumber down by a little exaggeration.

I doubt if any psychologist ever had the opportunity of working on a case as deep-seated as yours anyhow, and the prospect of a life and death struggle with such a unique psychosis would probably so intrigue him that he'd forget all about the price.

Then, after you were all cured, we could sit back and gaze fondly at the lovely planetary, space-ship and future city covers that you would turn out month after month with never a dud in your record.

Utopia sure is silly, isn't it?

In closing, where in heck is Murphy?

Why in tarnation can't you get:

A novlette by Williamson? A novel by Taine? A short by D. D. Sharp? A cover by Paul? A book-jacket by Finlay? Rid of Anderson?—Graying, Michigan.

I think you have something there, young feller me lad. No, I didn't say what. When I think it's time to trim cargo and lighten ship by shooting you out through one of the torpedo tubes I'll say so. Meanwhile, you unloaded a choice barrage of words all in one wad. We'll see what can be done about some of your suggestions as we get around to them. That goes for all you dock wall-lopers of space, by the way. In this streamlined era at the rate of speed we are traveling, we are sometimes far past the space port where a reader wants some cargo jettisoned or a shipment taken on by the time we get the message, much less figuring time out for our response.

And speaking about speed, we've always wondered just what really would happen if a space traveler exceeded the speed of light. The Fitzgerald contraction, if I'm not in over my head, advances the theory that an object shrinks in the direction in which it is traveling and in ratio to its speed. At the speed of light, then, it disappears—presumably. But does the object itself know, realize, or admit that it has flown out of existence? And when it exceeds the speed of light, why doesn't it start sticking out on the other side, sort of an inside-out or reverse affair? Which brings us back to the whiffenpoof, or the Capistrano swallow of space.

And, having laid that egg in your respective laps for suitable unscrambling at your leisure, we return you now to—the mail bag. It seems that the November issue of TWS, according to Charles Hidley, must have perilously approached the speed of light. Anyway, something flattened it out.

NOTES ON NOVEMBER

By Charles Hidley

The November issue of T.W.S. was an extremely and surprisingly flat one. It in no way compares with some of the previous copies of the past few months, and it has only a very few good items to boast. The illustrations were comparable to the rest of the issue in that they were of the poorer grade of Wesso.

The cover, on the other hand, did much to lift the mag up a bit, and proves that Bergey is strictly a "human" artist and lacks the imagination for fantasy.

Astonishingly enough, the cover yarn by Arthur is No. 1 and far ahead of the novel. I was not a little disappointed in Tracy with his extremely overworn plot of hidden underground refuges. Burks, Heinlein and others have more than elaborated on this theme in recent months. The writing of the latter yarn

(Continued on page 124)

**THIS MAN DIDN'T BELIEVE HE
COULD LEARN MUSIC BY MAIL**



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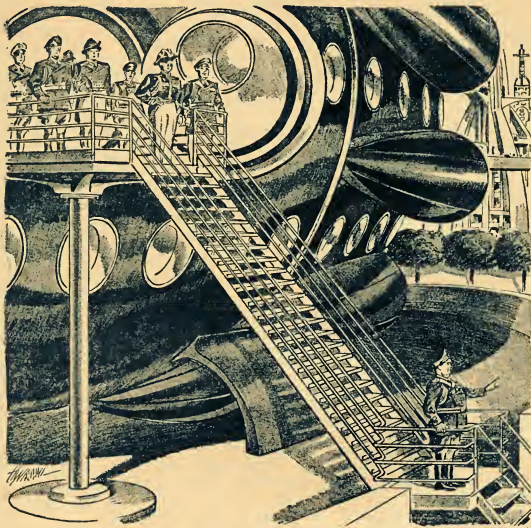
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CITADEL OF



The Hell's Enders roared a cheer as Garson advanced toward the President

Exiled to Mars' Grim Penal Colony, Cade Garson Vows
to Make Laboratory Magic Give Men Back Their Souls!

CHAPTER ONE

The Exile

"FOR a crime so great," the sentencing judge had said, "it would be ridiculous to condemn you to death, even if in this enlightened age we still believed in

the barbaric practice of capital punishment. Had you all the lives of all your ancestors to give, you could still not atone. It is absurd even to sentence you to banishment, where you will finish out the years of your life with murderers, traitors and fratricides."

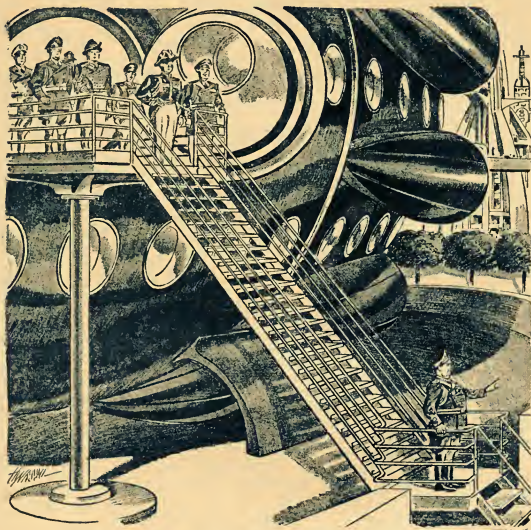
The judge paused, went on:
"There is no sentence that can real-

A Complete
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CITADEL OF SCIENCE

By ARTHUR J. BURKS

Author of "West Point of Tomorrow,"
"Earth, the Marauder," etc.



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ly fit the ghastliness of your crime. Punishing your body alone will never give us full payment for what you have done. Your mind must be your tormentor, too. Therefore we sentence you to exile on Mars."

Cade Garson closed his eyes as the faster-than-lightning space ship sped along its gravitational lines of force, carrying him to the red planet that

was to be his dread home. Mentally he looked back to the last scene in the courtroom. Cade Garson, a failure at the very end, had faced the obvious hatred of his accusers, conquerors and judges.

"No man before you has ever accomplished so much evil," a judge had stated.

Others had been even more bitter.

SCIENCE

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There was no pride in the fact that his judges had been the greatest men in the world—greatest because they were successful, the masters of their dominions.

He roused himself, snapped his fingers at the captain of the space ship. The officer's face went gray with fear.

"A cup of coffee, Captain," Garson said quietly, yet the deadly calm of that voice was an ominous sound no man could ever forget. "I would also like a bowl of fruit and nuts—immediately! Be sure that the coffee is scalding hot, that there is enough for a second cup, and that the major portion of the nuts are almonds."

The compartment was silent with horrible expectancy. The officers and the five other prisoners watched tensely to see if the captain would resent being treated like a common waiter. But he stood quietly, his eyes helpless with indecision. Instantly, though, his heels clicked smartly together and he bowed slightly.

"Yes, sir," he said, his voice trembling. "Immediately, sir."

THAT the captain feared and abhorred him, Cade Garson knew. That the captain dared disobey him, though there must have been a dozen men aboard who could have broken Garson with their bare fists, he knew to be impossible. No one ever had disobeyed Cade Garson since he had been twenty years old. From the age of twenty to the age of thirty—ten years of the most important and far-reaching events in the history of the Universe!

Cade Garson had been a part of those years, a mighty, tremendous part. Because of those years, the captain of a space ship clicked his heels to him, bowed, and marched away to bring him coffee, fruit and nuts. More important men than he had obeyed Garson's orders with the alacrity of well trained servants.

Cade Garson gave no thought to this phenomenon. He took it for granted. He was only impatient that there had been even a slight delay. If he should put his mind to interplanetary economics, transportation, conquest—especially now when interplanetary

communication was so new that it was bright and shining as though just freshly painted—there was no binding limit. . . .

He caught himself up short, grinned inwardly. After all, he was a prisoner going into exile. He was the most ignominious prisoner ever to be sent to Mars, the newest of penal colonies. Yet that facile mind of his was already darting this way and that, like a thousand foxes on a thousand scents, but all controlled by a single string, the invisible will of one entity, Cade Garson.

"Your food, sir," said Captain Lambert.

Garson did not look up for a moment, though he felt the eyes of the captain on him. He knew what the captain was thinking and trying desperately to make himself believe was not just a dream. He was serving a simple meal to the world's arch-criminal!

Cade Garson, still a young man, dressed like a tradesman, had nothing especially noteworthy about his appearance. Only when his eyes met and forced down even the most murderous glare was he like no other human being. More terrifying than even the deadly eyes, though, was the voice that never ranted, never shouted. Despite the ring of steel beneath the velvet softness, it was a pleasing voice, yet there was never a man so stupid that he could not recognize the lethal quality of that ring of steel. Cade Garson looked up now, and the captain recoiled a step.

"Thank you, Lambert," said the quiet voice. "Do you happen to know the population of the Penal Colony?"

"Four thousand, sir," the captain answered promptly.

"Ah, yes, I remember. Four thousand and eleven, to be exact, unless some have died since the last report."

Lambert drew in his breath audibly. One of the things about Garson that astounded people was his amazing gift for detail.

"Four thousand and seventeen when we arrive, Lambert," continued Garson. "History has been made with fewer men than that. History may be made again. . . ."

The captain was shocked into rigidity. His right hand clenched and lifted stiffly.

"If I thought you meant to organize those men," he blurted, "I'd — I wouldn't hesitate to kill—"

"You'd kill me, Lambert?" asked Cade Garson softly. There was no anger in his voice, no real concern. He simply studied the captain, who had the power of life and death on this space ship, as he might have studied the antics of a helpless beetle impaled upon a pin. "In spite of the fact that I am under the protection of the court which sentenced me? Take your post, Captain, and sit down."

Lambert did not even hesitate. Abysmal terror looked out of his eyes as he turned away from Garson. Staggering weakly, as though his legs were about to let him down, he took his customary position to the right and rear of the pilot. A slow flush rose and stained the back of his neck. Garson looked at the other men in the compartment. They refused to meet his invincible eyes. He recognized the fear in all of them, and it did not seem strange to him. He was unarmed, one against many, yet not one man there would have attacked him had his life depended on it.

"I have lost nothing by my sentence," mused Garson. "I still have the power that brought all this about. Maybe, with four thousand men. . . ."

HE forced himself not to think of that. Many of the men in the Colony had been prisoners for years. They could not be fully sane now. They might refuse to listen, might even turn on him without giving him a chance to prove his ability.

But one thought persisted. If he could make the men listen to his compelling voice, he would win despite the hideous imprisonment that shakes men's minds—even those as strong as Cade Garson's.

He knew that the Space Ship *Amaranth III* was due on Mars at seven in the morning. It was now ten o'clock at night, February 17, 2418 A.D. Cade Garson decided to waken at exactly 6:55 in the morning. Then he calmly went to sleep.

He realized that Lambert would brood during the night on Garson's potentialities for discord on Mars. He might even bring himself to the point of murdering Garson. But Garson did not allow that to trouble his sleep. He felt he had no need to worry. The very fact that he slept in the face of such a possibility would, he knew, build up the fascinated fear of him in Lambert's mind until he was perfectly safe.

The shouting and invective began fully ten minutes before Cade Garson wakened. But those ten minutes were important to him. Instead of letting the noise disturb him, he slept on until exactly the moment he had decided upon when he had gone to sleep. He sat up at 6:55, instantly wide awake, instantly aware of the shouts and what they meant.

"Don't you leave Garson here! Take him into outer space and cast him adrift! If you leave him, or even allow him to set foot on Mars, we will detain the *Amaranth* and kill every man aboard her!"

The face of the pilot was white, but it was no whiter than the faces of the new prisoners and the crew. Lambert stumbled shakily to Garson.

"You hear, sir? What shall we do?"

"Carry out the sentence of the court," said Garson. "What else can you do?"

"But you heard them. They mean every word. It's as much as our lives are worth. They hate and fear you as much as—"

"The court that sentenced me hated and feared me," finished Garson. "Step aside, Lambert. I'll talk to them."

"But, sir, I beg you to be careful! They're desperate."

Without listening, Garson had already drawn on his Martian ulster, completely equipped to preserve the life of an Earthman on Mars. He stepped through the door before Lambert could interfere—if he had dared. Garson stood on the landing platform, looking down into the white, savage faces of the yelling multitude. But he said nothing, and his calm features did not tense.

Thousands of fists were being

shaken at him, accompanying the shouts of vicious hatred. Garson stared at the exiles thoughtfully, unconcerned, as he had stared at Captain Lambert the night before.

He said nothing, yet a moment later the fists unclenched and dropped. Swiftly the voices died, and the exiles of Mars were completely silent and watchful.

Garson's first words were an anticlimax. He spoke over his shoulder through the door behind him.

"You may leave for the return to Earth when you are ready, Captain Lambert."

Then Garson calmly walked down the steps which led to the soil of Mars. He turned right, straight toward the exiles he had come to join. Without a word being spoken, a way was opened for him.

The master had not lost his power.

CHAPTER II

To Exercise Command

ALREADY Cade Garson had the exiles of Mars in the hollow of his hand. In five minutes, some of them were ready to follow him into the jaws of hell itself. He had called a score of men by their right names, which at least four of themselves—long-termers in the Colony—had forgotten. One of them was Doctor Medseau.

"You pretended to be God, Medseau," said Garson. "You took the lives of a thousand children before you were discovered, because you, making yourself the judge and jury, decided they should not be allowed to live. Whether you were right or wrong rests with your own conscience."

"Imagine!" snorted Medseau. "Cade Garson, speaking of conscience!"

"I have one, Medseau," said Garson. "Next to myself, you have probably the best mind on Mars. Take me to my quarters and bring the head men. Plans must be made at once. There is not a moment to lose if I am to expiate my crimes in full."

Frowning his mystification, Medseau turned and snapped the names of half a dozen men, nor did he seem surprised that Garson knew them. No human being had any idea of the depth of Garson's memory for names, faces, facts. That had been one of the secrets of his dread success.

"Tell the others to return to whatever they were not doing, until word is passed that a new order has come to the Colony," Garson added calmly. "This place is a pigsty. Do you men think I'm going to stand for filth like this, that merely by existing in exile I can pay for my crimes, or that you can? I am going to pay in full. In order for me to do so, I must insist that each of you also pays in full—and then a hundredfold, a thousandfold."

"But you have no authority," Medseau argued.

A bearded giant of a man, he looked down from a height of six feet four upon the five feet eight of Cade Garson.

"What I need I take, as you must know, Medseau. Let us waste no time in discussion. I believe you can tell me everything there is to know about Hell's End, as we prisoners quaintly call the Martian Penal Colony."

"I can tell you all about it in a few words, sir," said Medseau, apparently unconscious that he used the term of respect. "Exiles come here. Provisions are sent regularly. They do nothing except amuse themselves as best they can, fight a bit, talk, and wait to die. Merely being exiles is enough punishment for them."

"Exiles in rags," Garson replied disdainfully. "No pride left in them. My pride has never diminished, and it never will. Pride must be reborn in the rest of the exiles, for I have a purpose. My purpose must become theirs."

"They will refuse obedience," stated Medseau.

Even as he said it, he knew the statement was absurd. No lesser man ever refused obedience to Cade Garson. It was so obviously absurd that Garson did not even reply.

The doctor led the way across a bare, gloomy plain, toward a rim of

black, smooth mountains. Below them, Garson could see the dim lights of the Penal barracks. Harsh stone buildings quarried from the Martian hills beyond, they were equipped with Spartan simplicity to sustain the lives of men who had to live to the last possible moment in order to expiate their crimes.

Medseau indicated the largest building to Garson, and Garson entered it. He saw a stone bench, like a bizarre Chinese *kang* clear around the wall. There was a square stone, table-high, in the middle of the great room. Four chairs, made of wood that was the color of blood, stood around the stone table.

"Remove all the chairs but one," ordered Garson.

MEDSEAU and the six men who had followed at a respectful distance swiftly obeyed the casual command. Then Medseau pulled out the last chair, and Garson sat down. The seven others stood stiffly at attention, trying to avoid the deadly calm eyes. The fear was in their faces to which Garson had become accustomed, always expected. He studied them for a moment, flexing his lean fingers as he pondered the eerie situation.

Then his voice cut effortlessly, like a sharp blade, when he spoke.

"Every man in the Colony begins work at once, under our orders. There will be no disobedience. We have all been exiled from our homes. Naturally most of us loved those homes. You who have been here long enough undoubtedly hate Hell's End with a bitter hatred. I intend that within a month you will love it so much that you would fight for it as a patriot fights for his fatherland. You will fight to remain in it even if you are pardoned.

"We shall make Hell's End the envy of the Universe, and the repository of such knowledge as man possesses at the moment. Upon this knowledge we shall base the knowledge of tomorrow, the extent of which no man may even guess. Medseau, you were ahead of your time, and you were wrong. But you were a brilliant sci-

entist. Even in fifteen years of exile, you cannot have lost all your skill and learning. Your brain should even be better for having lain fallow for so long."

"I'd be glad to know what you're talking about, sir," said the doctor respectfully.

Frowns of mystification distorted the fear-whitened faces of the others.

"It's simple, Medseau," answered Garson. "Do you believe it is possible to increase the human life-span an average period of twenty years, and keep the human body healthy?"

"Why, yes, sir. Of course. But there would have to be a laboratory, a corps of research scientists. It couldn't be done here. There is no equipment."

"We will do with what we have," Garson declared crisply. "You will set aside one of the barracks as a laboratory. You will concentrate on that one problem. Maybe it will be a drug, a life essence, a serum, a new element, a balanced diet, a method of preventing physical deterioration. But whatever it is, you will find it. Select such men as you need. You were sentenced for the destruction of a thousand lives. If you could increase the life-span of the entire human race so much as a minute, you would balance the account, wouldn't you?"

"Good Lord, yes!" gasped the doctor. "Then do it," Garson turned. "Jansen."

"Yes, sir?" said another hulking brute of a man.

"You were a construction engineer, Jansen. Your greatest skyscraper on Earth has not yet been surpassed. You are here because your last building collapsed, killing several people. You were greedy for gain, and stinted on safety."

Jansen looked defiant until Garson's eyes made him shrug a confession.

"You will take such men as you need and turn Hell's End into a model city, as fast as humanly possible—and even faster, Jansen. Your expiation begins this very minute."

"Yes, sir," said Jansen.

His face lost the pallor of fear that the presence of Garson had placed there.

His suddenly squared shoulders proved that he could do what he had been instructed to do.

"And it will be so equipped electrically," added Garson, "that Hell's End will be a paradise to live in, compared with the most modern city on Earth. Get busy."

"But the men won't work," Jansen protested.

"They will work. When each of you has been assigned his task, I will talk to the others."

JANSEN'S eyes brightened.

"The eloquence of Garson!" he whispered almost in awe. "Yes, I think that would do it."

"Words are the miracles of humanity," Garson agreed quietly. "The right ones will do it. Beginning now, the best music, the finest art, the greatest literature will emanate from Hell's End, gentlemen. For each of you has committed crimes which only courage and imagination could have made apparently necessary. Courage and imagination are the only qualities that can create the miracles I am demanding. By the way, the *Amaranth* will return in a month, Medseau. You will keep a daily report of progress, to be sent back on the *Amaranth* to the court which sentenced me. I intend that they shall know everything."

"Except, perhaps, the secret of our discoveries," the doctor suggested slyly. "That, of course, will remain in our hands. Eventually it will mean power beyond any you have yet exercised!"

"I, at least, will know those secrets," stated Garson. "What I choose to do with them will be a matter I shall decide for myself."

"But eventually," gritted Medseau, his huge hands clenching into fists, "we shall all be avenged on those who sent us here. Isn't that what you plan, sir?"

"In a way," said Garson slowly. "Yes, I suppose so. Now remember that beginning at once, the wheels of progress start rolling in Hell's End. Incidentally I like that name, though I propose that the meaning of it will be different long before we have done. In one year, Hell's End must and shall

be the envy of every city in the Universe. Now I shall talk to the others out front. Have them assemble."

"It won't be necessary," blurted Medseau, excitement flushing his face. "They have so little to do, so little to occupy their minds, that they'll all be standing or sitting around outside. They must be waiting to find out what Cade Garson is going to do on Mars."

"They meant to destroy me when I landed," said Garson.

"I don't think one of them remembers that."

"Good. I will give you gentlemen ten minutes to tell them in general what we are going to do. Then I'll talk to them. You may go."

They went out, waiting almost on tiptoes, closing the massive stone door silently behind them. Cade Garson sat in his straight, hard chair without noticing its lack of comfort. Only those who had once opposed him would have recognized by his dilated nostrils that he was flushed with excitement.

"I have lost nothing," he decided, after unemotionally weighing the facts. "I have gained by what the court did to me. I shall accomplish everything I plan to accomplish. Medseau's desire for revenge will be satisfied, though perhaps not in exactly the way he imagines at the moment. His imagination is great, compared with most men. But mine, I believe, is even greater than his."

He felt the reins of power beyond any he had ever known slip into his hands, yet he did not allow his judicious mind to grow overconfident. Deliberately he reached the accurate conclusion that he was still a young man. Years were the least important part of his youth.

The main thing was that he had learned from his experiences on Earth, and he had not been scarred by any of the horror.

On Mars, he could not hope to live to be a hundred and fifty. But he surely should reach seventy and still be sturdy, with his imagination constantly increasing.

Then he had forty years in which to crowd what the Universe would regard as miracles.

CHAPTER III

The Miracle

"WE'RE ready, sir," said Medseau. Garson had not heard him come in, so deeply had he been concentrating. He looked up to see the feverish excitement in Medseau's face and the dawning hope which he had deliberately planted in the breast of the once famous doctor. "The men are naturally curious."

Garson stepped to the door. As he did so, the *Amaranth*, far beyond the heads of the crowd of exiles, shot away on her return trip. A streak of unbelievable speed reaching out into interplanetary space, she was beginning a great parabola toward Earth. Utter silence gripped the assembly. None even seemed to hear the rush of the *Amaranth's* departure.

"Gentlemen," said Garson calmly, "it isn't enough that you merely live out your lives in exile, though the courts which sentenced you can enforce nothing beyond that. Nor, in fact, can I. When I have finished, it will not be necessary. We must remain here the rest of our lives. Therefore Hell's End must be better than anything we left, so that none of us shall ever pine to return. But more than that, each of us is going to atone a hundredfold for our crimes. By so doing, we will make of Hell's End and Mars the seat of a new power."

Cade Garson paused for a moment, studying their intent features before going on.

"Napoleon brooded in exile, feeling sorry for himself. He had actually lost nothing, because he still had his life. He might have used the imagination which made him what he was at the apex of his power, to give himself power in some other direction. It apparently did not occur to him. His German successor, on Tarpaea, did the same thing. They admitted failure, both of them, when they should have mounted to new heights, should have enriched the world and themselves."

Out in the listening crowd, a man laughed mockingly.

"Sure," he taunted. "Some of us can atone for our crimes. Plenty of us still have consciences because our crimes were mostly political, with a few enthusiastic scientists here and there. You see, we don't have oceans of blood to drown our consciences in."

"I'm glad someone mentioned that now," replied Garson. "We can dispose of it at once, instead of having it crop up when it can do real damage. According to the findings of the court, I am responsible for the deaths of twenty million men, women and children, in the greatest war the Earth ever knew. I do not argue with that court, for it is my own product. If I had not lived, it would never have been. Since it is mine, I honor its findings."

"It hopelessly sentenced me to attempt to expiate a crime for which no member of that court could conceive any possible expiation. Yet it is possible, but only through me. On the other hand, you must believe me when I tell you that I shall balance the books of my conscience, in the hands of whatever gods I may believe in. Then you will have to believe that the most abandoned of you—whose villainy is comparable to mine as the mass of an asteroid is to Betelgeuse—can also balance his books."

For a long moment there was silence among the exiles. They were men whose carelessness or mistakes had caused loss of life, whose political beliefs had been considered treasonable by their rulers. The answer, when it came, was strange and stirring. Garson looked into the faces of the men and found them cold and hard with determination and renewed hope.

"You realize you can do it," he said quietly. "I can do it. Yet I invented mechanical armies by which decisions in war could be reached without bloodshed. I unwittingly made them too close to perfection. The machines revolted and slew twenty million human beings before the world became one nation to destroy them. If I can make atonement, so can each of you. But you need my help and I need yours."

He heard the cheer which rose spontaneously, knew that the exiles were

with him. The voluntary loyalty of these four thousand human wrecks meant more to him than the blind hero-worship of his former millions of followers. He stood erect on the platform, and only his lips moved in a whispered silent vow to the judges who had sentenced him.

"I'll show you," he said. "I'll prove that though my failure to consolidate the power I had created destroyed the lives of twenty million, the result was a World Nation for the first time in history. I'll prove it to you, and I'll balance the books of the Hell's Enders."

* * *

TWO years later, he recalled these words as he looked at the man who stood before him.

"How old are you, Didrick?" he asked.

"By the calendar, sir, ninety," said Didrick. "Physically I'm about thirty-five. I never felt more fit when I was a kid in school, sir."

Cade Garson turned his head and smiled at Medseau. The doctor smiled back, his face alight, his eyes shining with pride.

"There is no doubt about it, Cade," blurted Medseau. "We've found it, and it's no false lead. We've found what the ancients spent their lives seeking. We are the heirs of Ponce de Leon, who sought the Fountain of Youth a thousand years ago. But we have succeeded where he failed.

"With our own mechanical equipment we have isolated the missing element, stronger than radium, lacking its dangerous qualities. When it's injected into the bloodstream, it not only arrests deterioration, but reinvigorates itself for a period of time approximating thirty years."

"And there is no possibility of error?" Garson urged.

"For the past two years, sir," said Medseau, "I have checked and rechecked. There can be no error."

Garson leaned back in his chair.

"Then we've done it, Medseau. We have increased the life-span. From the rocks of Mars we have filched the secret of the gods. We have sorted it out with our own equipment, invented here in Hell's End. This cure

for human deterioration will be known as *Medse*, in your honor. I shall recommend that name to our peers.

"Medseau, we have done more than you think. We have, in effect, rid the world of disease. We have eradicated cancer. We have made illness unnecessary. Now all we have to do is prove to my peers that this new invention will not turn against our people, that this is not some trick of mine to get a pardon. And, Medseau, I understand from Laughlin that another great discovery is about ready to be announced."

The doctor started. "Not the—"

"Exactly. The Laughlin Universal Ray, a concentration of super-force drawn from the energy which compels the celestial bodies to maintain their positions in relation to each other. By the use of that force, all other force can be nullified. Laughlin has constructed his Universal Ray Coordinator in a size that can be carried in the hand, can be produced in great quantities, yet is capable of rendering all lesser force powerless.

"It can prevent explosives from being detonated, cannon from firing. We can even immobilize the weapons of Earth, if we wish. Yet a baby can bear the full force of the ray without knowing or feeling that he is being subjected to it."

"Imagine having that mighty power in your hands, Cade!" breathed Medseau, awe in his voice. "You've beaten those who exiled you. Your power is greater than it was even before your machines turned renegade. You can make the men who sentenced you come to you on bended knees!"

"Yes, Medseau, if I wanted to. But with *Medse* in our keeping, there is no need to hurry. Medseau, I'm eager to have our jailers know what we have done. I shall want to have the maximum shipment of *Medse* ready for the next trip to Earth on the *Amaranth*."

"But not the formula, Cade?" Medseau asked in appeal.

"No, Doctor, not the formula. It remains in the locked book of the Hell's Enders, along with the other formulae we have perfected and will perfect. Power, Medseau, can be a heady thing."

"Yes, and revenge can be sweet! But I'm glad I also have plenty of time, thanks to—to—well, *Medse*, since you insist on calling it that."

"Yes, revenge will be sweet," Garson agreed ambiguously. "I'd like you to go now and keep the wheels turning. I must make out a report to accompany the *Medse* shipment."

CHAPTER IV

Pardons for Seven

WITHIN two years, Hell's End had become a city of which Cade Garson, whose metal monsters had once ravished Earth, was extremely proud. The population had doubled, as criminals of all sorts were sent out from the Earth. Each had been fitted instantly into the growing, exciting life of Hell's End.

That life had not been kept secret from the home planet. Jansen had perfected interplanetary communication. Once each day, Garson himself spoke into the spatial transmitter, his voice being picked up on Earth and rebroadcast to every human being who cared to listen. He made Hell's End live for them, excited their imagination with it.

Hell's End became a citadel of science—a city of domes and minarets of heart-stopping beauty. Garson had always yearned for beauty, but on Earth his life had been so filled with activity, he had never had the time for it. Now he had taken time.

There was a Hall of Music, in which the greatest music of the worlds could be heard. There was a library that contained the best in literature and science. There was comfort. Food had been developed on Mars, to remove the necessity of depending on imports from Earth. In the brief span of two years, Hell's End had become independent.

Now Garson's task was to make the Universe depend upon Hell's End. It was an ambitious dream, he knew, but he was bringing it to reality.

He delighted particularly in strolling through the Botanical Gardens.

On Earth, industry had crowded out the beauty of Nature. But Garson had employed the ingenuity of a great city planner, who had granted space to growing things. Imaginative horticulturists had bred terrestrial flowers, shrubs and trees with Martian flora, producing results that were more beautiful than the originals.

His Martian pets had been carefully trained. They were impossible to describe because Earth held nothing even remotely resembling them. They followed him wherever he went, or frolicked at his feet when he rested.

Long, beautifully proportioned Gasts might conceivably have been dog-cat hybrids, yet actually resembled neither animal. *Rinths*, the flying serpents of the Far Marshes, had wings like silk and colors like the rainbows of morning, with skin like fresh *Curz* milk. Their very voices were music. They had been easily tamed, and were more loyal to mankind than dogs had ever been. Birdlike creatures in the tall, stately trees fluttered down to rest upon the shoulders of Hell's Enders who strolled in the Gardens.

It was a dream of paradise, yet Cade Garson had scarcely begun. But Hell's End was the growing symbol of his march back to power, and he had plenty of time.

Winding walks of stone mosaic, mined from the ageless hills, were beautiful beyond marble or travertine. Chuckling, burbling fountains rose in the grassy terraces that once had been dry, dusty stretches of desert.

Under Hell's End, was an expanding labyrinth of mines. In those tunnels, men eagerly filched from the ground the elements that had to be used in the experiments of the scientists. They had learned to share Cade Garson's pride in refusing to ask Earth for anything. When he had instructed his peers to cease sending supplies to Mars the minute Hell's End had become self-sufficient, the exiles had walked around with their chests expanded.

Cade Garson had always believed in advertising. Hell's End became a Mecca for tourists. The *Amaranth* was now the flagship of a gigantic

fleet of space ships which plied between Earth and Mars, bringing children, old folks, honeymooners to visit Hell's End and marvel over what Cade Garson and his men had done. Nothing was hidden from them. They were not only allowed but urged to visit the mines, ferret out whatever secrets they wanted to know.

AS soon as Garson had dispatched the first big shipment of *Medse*, he had created a problem for the Council of the World Nation by announcing over interplanetary radio just what the new substance would do. He knew they must have met to gabble over whether they dared to keep the discovery from the people. After several tense days, they had reluctantly accepted it. If they had not the people would have torn them to pieces. Garson smiled gently whenever he thought of it and he thought of it often.

He had done well. There wasn't a disloyal man among his people. He had sworn them to two oaths, however. None was ever to divulge the secrets he had learned in Hell's End unless permission were given by Garson. Also, no man was to marry until Cade Garson had had five years in which to realize his dreams for Hell's End. Women were a distraction, he insisted. Besides, when the time came for women to be admitted, his men should have the best possible homes for their families. Their homes now were as good as any on Earth, but Cade was not satisfied, nor would he allow his men to be.

There was no difficulty about the restriction on women.

No dream he had ever had for Earth could approach the reality of Hell's End for Cade Garson. Indirectly he had been responsible for the death of twenty million human beings, but the torment of helplessness through those days of slaughter had been enough punishment. Spending the rest of his life in self-torture would not give back those dead nor help the living. But through his organization of Hell's End, he had already increased the life-span of humanity, and twenty million deaths would result in a profit for

the race. The gift could be perpetuated after he also died.

"And *Medse* alone, Cade," said Medseau, as they walked through the Botanical Gardens one afternoon, "makes you master of Earth, if that's what you want. All you have to do is threaten to withhold further shipments of it, retain the secret of its manufacture, and let the world know what you are doing. The people of Earth will send their rulers to you to offer you a throne if you wish it. Isn't that true?"

"Yes, Medseau, it is true," replied Garson calmly. "I am the only man in Hell's End who knows how to open the locked books. And I am convinced, since I cannot remember the formula, that you cannot."

"That's true, Cade. As usual, you have overlooked no detail. There is no possibility of our rebelling against you, since you have the secret of the locked books. But when you die—"

"I have made all arrangements to pass the secret on, Medseau. I wouldn't overlook anything so obvious."

"To whom will it pass?" asked Medseau, with badly concealed eagerness.

Garson smiled. "If I told you that, I could be murdered for the secret. Not that I do not trust you, Medseau, nor do I distrust anyone in Hell's End. But I learned that you can never really be sure about power, and I know what lust for it will do to a man. You'll probably admit that I'm the best qualified man to judge that."

"Yes, but you have it all back already!"

"Because I have kept my counsel," Garson stated. "In less than a year more, Medseau, I will have only to crook my finger to control not just the world which exiled me, but the worlds which have been contacted since."

"But you prefer to let your peers stew in their own juice for as long as possible, growing in fear of you, wondering what to do about you."

"Perhaps, Medseau. I don't even know yet what I shall do when I have the power."

"I can't understand you, Cade," the doctor protested bewilderedly. "You've kept your peers informed of everything, from the moment we

opened interplanetary communication. They know everything you've done. You must have a reason."

GARSON bent and sensuously touched a satiny flower.

"I have. I want them to know that I am creating power, and that they must not stop me. I do not tell them so, but I make it quite plain. They dare not exile me to any other planet, either. If they do, they will lose what I am able to produce from Hell's End. I have made a test of that power, Medseau.

"When the *Amaranth* gets in a few minutes from now, the mail should bring me proof of any influence I may have developed during the last two years—or my lack of it. I want you, Jansen and the other aides to report to me a half-hour after the mail arrives. I may have some good news for you."

Medseau stopped, stared up at the yawning depths of space above the rocket landing field outside the city.

"She's coming in now, Cade. The mail should arrive by the time we get back to your headquarters."

They strolled back through the Botanical Gardens. The birds, seeming to sense their preoccupation, did not fly down to explore their pockets for the nuts, seeds and fruits that both men usually brought for them. The trailing *Gasts* kept their distance. It was as though they, like Medseau, sensed a climax in the existence of Hell's End.

Silently the two men entered the house which had been the home of Cade Garson since the first day of his exile. Garson sat down in his customary chair.

Medseau fidgeted on the bench that circled the wall when the mail came in and Garson slit the envelopes. One of them, the doctor noticed, was a fat one, official-looking. He saw the look of satisfaction on Garson's face, knew that he had again played a world-shaking game and had won.

Slowly Garson raised his head.

"Medseau, please call in the other aides. It's come, and it spells success. I'm sure all of you will be glad to know about it."

Five minutes later, he turned from

his pondering to the seven men who had dominated Hell's End before his arrival. During the past years, though, they had subordinated their personalities to his, to achieve the goal he had set up for all of them to reach.

"Gentlemen," he said, "you are free to go back to Earth and resume your lives there. I asked the Council, because of your great work here, to pardon all seven of you. I explained that your crimes had long since been paid for. It seems that the Council agrees with me. These papers are your full and complete pardons. I am sorry only because I shall have to find aides to take your places."

Medseau gasped. For fifteen years, until Garson came, he had prayed for just such a miracle. But he had been utterly without hope that it would ever happen. Now Garson had accomplished the impossible. Medseau put his hand out for the pardon. Garson rose, shook hands with each one and congratulated them. Then he gave the men the papers that opened the way for them to return to the lives from which they had been exiled. All their books were balanced. Their debts to humanity had been paid in full.

MEDSEAU, holding his pardon in a hand that shook with emotion, stared into Cade Garson's remote eyes.

"It's just as true that you have also paid in full," he insisted. "Where is your pardon?"

"Naturally I am considered dangerous, even here. I'll never return to Earth while those who exiled me can prevent it."

"They're going to keep you from returning?" Jansen said contemptuously. "If you wanted to go back, they couldn't stop you, and they know it."

"I know it, too," said Garson. "But they sent me here. I am waiting for them to want me to return."

"Then I guess I'll wait with you," Medseau said casually.

For the first time in his life, Cade Garson's lips trembled visibly. He turned away, blinking rapidly as the

seven men unostentatiously tore their pardons into small pieces and dropped them into the ash incinerators that had been developed in Hell's End.

"We'll wait and go back with you—in triumph!" Jansen declared.

"Revenge is still sweet?" Garson asked softly.

"Sweeter with each passing hour!" snarled Medseau. "I wouldn't miss your return and the groveling of your enemies for anything in any world!"

CHAPTER V

Renunciation Heightens Power

EVERYWHERE throughout Earth there was complete success for the discoveries of Cade Garson and his Hell's Enders. As he had intended, the name of the exile colony had come to symbolize an end to the various countless hells to which mankind was heir. Illness and disease had been eradicated. The human life-span had been increased to an average of a hundred years, and could easily be increased again and again.

Two more years had passed, but no word had yet come from the Council. The faces of Garson and his aides had become grim. The failure of the seven pardoned men to return to Earth had been taken by the Council as proof that they were in some sort of conspiracy with Garson. The Council had rescinded their pardons six months after the men had destroyed them.

But Garson, secure in his power, walked as proudly as he had walked when he had been a free man of Earth. Taut-featured, piercing of eye, he walked like a conqueror. Those who exiled him had given only one small sign that they understood that his power was already greater than it ever had been on Earth. But he knew they realized how solidly he was entrenched. They had bribed his aides with pardons to win them away from him.

"They are waiting for me to make a move, Medseau," Garson explained. "They expect the worst."

But the day he put his feeling into words was the day it began. Jansen brought the message, relayed through interplanetary radio. The message came directly from the President of the Council.

A majority of the Council, led by President Dulio Hogarth, was aboard the *Amaranth*. Traveling this time as a military transport, the space ship was en route to Hell's End.

"They're coming, sir!" Jansen cried excitedly. "They didn't send for you—they're coming to you! They didn't warn you. Do you think they're bringing a force to destroy us?"

Garson smiled gently and shook his head.

"They know, we know, and the people of Earth know that if we are wiped out, all our secrets are wiped out with us. Jansen, this is it. The Council has come to sound me out and to do whatever it pleases me to tell them to do. Just as the heads of nations, during my last year on earth, came to me to barter for protection against the machines I could no longer control."

"And your terms were to let their people unite under your command against the renegade machines."

"Yes, those are the only terms that can guarantee complete victory. Now, gentlemen, what happens when Hogarth and his satellites arrive will be of deepest interest to every Hell's Ender. Therefore I want every man mustered before the landing field. We'll call it a guard of honor for the Council. Every man will be uniformed in his absolute best."

"You will go to meet them?" asked Medseau anxiously.

"No. I'll wait here. So will you, my aides. If they've come to us from Earth, they can travel another short distance from the landing field. They will. It may hurt their pride, but no more than it has already been hurt."

The *Amaranth* was settling slowly down to the landing field. Cade Garson, standing straight and firm as the soldier he had once been, looked down the long lane through the convicts. The lane led from his door to the landing field. To right and left, silent Hell's Enders, a dozen deep, stood stiffly at attention. But their eyes

were amused, waiting for the Council to walk between them like men running the gauntlet.

THE *Amaranth* gradually came to rest. There was a long pause, as though those aboard were trying to figure out just what the guard of honor meant. Then the door swung open. Dulo Hogarth himself was the first to appear on the platform. Behind him came six others. All of them had been, four years before, outspoken in their condemnation of Cade Garson, the man whose renegade mechanical armies had destroyed twenty million lives.

As paunchy Dulo Hogarth came slowly down the steps clad in a brilliant uniform, Medseu glanced at Garson.

"He must like to be fat, Cade," he whispered sardonically. "I guess nobody ever told him that *Medse* was a cure for obesity."

"He would have us to thank, and he'd rather be fat than do that," replied Garson. "But he'll come around when he gets old enough to start worrying about death."

His lean lips drew down in grim enjoyment as he watched President Hogarth hesitate on the landing platform. Traveling from Earth to Mars must have been a bitter pill for a proud man to swallow. But being forced to visit a convict in what was once the worst penal colony in the System, to plead with an exile, must have galled him to the very soul. Garson knew how he felt. When he had surrendered to the Council, he had been forced to meet them in the place they appointed. That had been worse than defeat, or anything that came before or after.

The grimness of Garson's lips disappeared slowly. His tensely triumphant body relaxed and he pushed his hands in his pockets. When he turned to Medseu, his eyes were troubled.

"I'm a convict, Doctor," he said worriedly. "How could I go to Earth to plead with him? I have no need for revenge, nor have any of us in Hell's End. We took our chance to atone, and a sudden impulse is making me spoil it. Run to Hogarth, Medseu, and ask him to wait for me."

Cade Garson hastened back into his headquarters. Until then, the Hell's Enders had been silent, their faces amused, eager to watch the degradation of Earth's rulers. Their murmur of astonishment broke into a cheer when Cade Garson stepped out of his house, holding the Colony's locked books. His arms were trembling, but his features had changed, softened.

They had expected Hogarth to walk uneasily between them. Instead, Cade Garson strode toward the landing platform, while the exiles closed in behind him to see what was going to happen. Hogarth stood suspiciously on the platform, his eyes darting from face to face, looking for the murderousness he had known Garson's well trained features would not reveal.

Cade Garson stood at the base of the platform, gazing up at the fat man above. Suddenly, as though he were too weak to stand without aid, the President leaned on the rail and opened his mouth expectantly.

"I would have come to you, sir," Garson said quietly, in a voice that carried to every man on the field. "You could have sent for me, and I would not have refused. Since I am a convict—and with justice—I could not leave my penal colony. But I have come as far as I could, and I am sorry only that it could not be farther."

The President gulped, swallowed hard. His eyes ceased roaming fearfully over the faces of the Hell's Enders, settled on Garson with obvious disbelief.

"Have I your permission, sir, to climb the steps and present to you the locked books that contain all our secret formulae?" Garson asked in a hopeful voice.

Hogarth hesitated, and Garson knew the reason. He expected a sly trick, but he couldn't figure it out. Garson had to remain silent, though. Before taking him back because they had to, the Council must learn exactly what kind of man he was. He glanced swiftly through the door into the spaceship's cabin. The pilot's hand was on the controls, waiting for the first sign of violence to hurtle away from Hell's End.

The President nodded at last, his

eyes still alert for trickery. Slowly Garson climbed the steps and placed the books in Hogarth's hands. Incredulous, the President stared down at the books, then at Garson's face.

"These—these are the locked books!" Hogarth stammered hoarsely. "Are you voluntarily giving me the secrets that would have made you ruler of all mankind in every part of the Solar System? I came to tell you that, rather than defy your power or cheat the people of your discoveries, you have the strength to—"

"You represent the people of the System," Garson interrupted gently. "I represent the exiles of Mars. Your people owe no debt to mine, but ours owe a debt that can never be repaid. It took me a long time to realize that. The best we can do is work here, where we have nothing but our consciences to goad us on, and devote our lives to bettering the lives of your people. That will be our expiation. I know I have power, Mr. President. My fellow exiles and I have the power to serve those we harmed. What could be greater than that?"

There was a full minute's silence after he finished. Then the Hell's Enders roared a cheer that was greater than any Garson or Hogarth had ever heard. Garson smiled, but he was not fully satisfied yet. His people were with him in his renunciation of power. Were the people of Earth? His smile broadened to a grin. He took a step to meet President Hogarth, to accept the hand that was held out to him.

Side by side they descended the steps, grinning at the exiles who sur-

rounded them. Garson felt a tap on the shoulder. He turned, looked up at Medseau's almost smug features.

"I always hoped you'd do that, Cade."

Garson shrugged lightly. "It was about time we thought of doing something for humanity, instead of to it. Does that revenge satisfy you?"

"Look around at the boys and take a guess," the doctor said belligerently. "Underneath our savageness, we really wanted to do something worthwhile. But now that it's happened, I feel sort of rudderless. What do we do next?"

The President and the nearest men listened eagerly for Garson to reply.

"Make new plans, of course. We started well, but we'll have to continue. We've extended the life-span, and we've produced a power that can stop war. That's not enough. We must control the seasons, speed up interplanetary communication and try to shorten distances between the worlds, make inhospitable planets habitable, search for new knowledge—and increase man's security and learn how to produce happiness! I think we'll have enough of a program to start with. The more we discover, the more there is left for us to know."

Medseau laughed, but his laughter was a bit shaky. The exiles and President Hogarth laughed with him, but their laughter was no steadier than his. Garson had given them power, and they were eager to seize the reins. Selfishness and greed, though, would have given them small rewards against the applause of history and a better Solar System.

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The roaring blast
sounded like the clash
of worlds

THE MAD MOLECULE

By **ALFRED BESTER**

Author of "The Broken Axiom," "Voyage to Nowhere," etc.

IF I must blame someone, I suppose it was the rain-maker's fault, for he infuriated me so that I wasn't able to think clearly for hours afterward.

I had stopped off a few miles outside of York for a quick sandwich. Next to the stand was an ancient, weather-beaten house, and seated on the porch,

rocking in an incredibly old chair, was an ancient, weather-beaten man. I looked at him, he looked at me, and I went back to my sandwich. Then something in his manner prompted me to glance up again and I saw he was chortling with a dried-out cackle.

"Come to investigate me?" he wheezed.

I stared and forgot to chew.

"Like to investigate my laboratory?" he continued. Somehow that struck him as being excruciatingly funny. He doubled over in desiccated mirth.

"What in blazes are you dithering about?" I demanded.

"Didn't think anyone around here would know you, huh? Seen your pitchers in the papers, Doc Grout. I know all about you. Scientific consultant and investigator. Exposure o' frauds and suchlike. You come to expose me?"

"Who the devil are you?"

He wheezed a little longer and managed to point overhead. I looked up and saw a small shingle hung over the porch door:

JABEZ JACKSON
RAIN-MAKER

Now if there's anything calculated to infuriate me it's scientific humbug. I cannot stomach a fraud. Many people have heard about my work. Yet although I am, strictly speaking, a scientific consultant, most of the publicity I've received has been in my exposure of quacks. I do in science what Houdini used to do with phony mediums.

I glared alternately at the sign and this obviously fraud, Jackson, and wished fervently that I hadn't an appointment in York within half an hour. I would like to have seen what Jackson was up to.

"Whatsa matter, Doc?" inquired the rain-maker. "Don't yuh think I'm scientific?"

I threw down the remains of my sandwich and stamped to my car in a rage. As I started off toward York I leaned out of the window and glared at Jabez Jackson, rain-maker.

"Listen, you old mumbo-jumbo," I called, "I'll be back this way by five o'clock. I'll give you fifty dollars if you have so much as a mist in the air."

HONKING the horn mightily by way of a razzberry, I steamed up the highway feeling slightly less apoplectic, but I was still furious when I arrived at Larry Manson's home. I yanked the car up his driveway with a squeal of brakes, pushed my finger

halfway through the doorbell and almost knocked the butler over as I stormed into the house.

The fact that I'd bashed a fender on the Manson tractor-truck didn't help to calm me either. Larry was waiting for me in the library.

"Hel-lo!" he exclaimed. "You look like the wrath of God. Glad to see you, Grout."

"H're you, Larry?" I shook hands and tried to relax.

"Trouble on the road?"

"It's nothing," I grunted. "Let's forget about it, eh? Now tell me what this is all about. Your wire was cryptic, to say the least. You want advice or exposure this time?"

"A d m i r a t i o n, mostly." Manson grinned. "Eaten? Swell. We'll go right out to the shop. Grout, I've got something here that'll tear the hair off your head."

I groaned and let him rush me through the house.

Manson is a nice enough chap. In fact, we used to go to school together. He took a genuine interest in science at the time and probably would have gone into the faculty if he hadn't been cursed with too much money. But because he was, he stayed home and spent half his time cursing me with his crack-brain notions.

You know how that is. When you're on a university budget you can't afford to waste money on cock-eyed experiments. Everything has got to be right on paper first.

But not so with Larry Manson. He'd get too impatient and try to make things go before they were more than vague notions. He generally came running to me for advice.

"Now this," he exclaimed, "is really the nuts!"

He pushed me into his workshop, and locked the door. I looked about at the usual hodge-podge of expensive apparatus glittering in the bright August sunshine. I looked and reflected bitterly that what Manson wasted in pottering around would keep a real research lab in funds for years.

"All right," I said. "What's it going to be this time?"

"Atoms!" he announced proudly.

"Atoms—nuts!" I retorted. "I warn

you, Larry, if this is another wild-goose chase I'm going to charge you an outrageous fee."

"Nothing wild about this. Here, look."

He paced through the crowded shop and stood before an enormous dais that was a jungle of electrical apparatus shrouding a small steel tank. Some of the stuff I knew by sight. There were two Holweck mercury vapor pumps, and one of the biggest Radley field-force inductors I'd ever seen.

"Now this is the idea," Manson began.

He threw over a switch and immediately the vapor pumps began to hiss and sob. A horrible suspicion nudged me and I backed away slowly.

"Manson," I snapped, "have you ever tried this experiment before?"

It's sheer suicide to be present at some of his laboratory debuts.

"No," he answered, and grabbed my arm before I could make a break for it. "Don't worry, Grout. I swear this one is safe. I want you to watch it operate while I explain."

THE pumps bubbled merrily and he picked up a handful of scribbled pages and waved them before my nose.

"This is it," he said. "Look, if you had a bass drum packed solid with sand and you shook the drum, what would you hear?"

"Nothing."

"Right. But suppose you took out all the sand except one or two grains and then shook the drum. Then what?"

"Well," I said, "you'd hear the grains rattle against the drum-head."

"That's what I'm doing," he exploded happily. "I'm isolating a few atoms of hydrogen inside that tank. But I won't have to shake the tank to hear them because they move of their own energy. Particles of gas in motion."

"You're crazy!" I shouted. "And so's your machine!"

"We're not, Grout. Look at the plans." He shoved them into my hand. "I send a strong current through the walls of the tank. When only a few atoms of hydrogen are left we'll hear them every time they strike the energy

current. Like shots of static."

I glanced through the crumpled papers and tried to stop Manson from pointing with a stained forefinger. Despite myself I had to admit it looked like a workable idea, if he could afford the current it was going to take.

Those two pressure pumps would exhaust the chamber almost to a complete vacuum, like removing all but a few grains of sand. The tremendous electric field he would shoot through the tank walls would serve as the drum-head, so that each time an atom hit it we would hear a bounce of static on the P.A. system.

With only a few atoms remaining it looked as though we might actually hear something.

The mercury vapor pumps began to slam violently and I glanced at the pressure gauge. It was pretty low, and that meant the sand was being sucked out fast. Manson waited impatiently, gnawing his fingernails until at last the pumps heaved and heaved and finally switched off. According to the gauge the tank was so empty there couldn't be more than a few atoms left.

Manson laughed nervously and turned to me.

"What do you say?" he asked. "Want to hear an atom?"

"Just a minute," I answered.

I was staring at his wiring plan again, for there seemed to be something omitted. I didn't know what and I hadn't time to check for he brushed past me and threw on the electric field that was to act as a drum-head.

The steel sphere glowed with a kind of St. Elmo's fire when the force of that Titanic energy hit it. The tank shimmered and glowed with a smoky, phosphorescent light and seemed to bulge under the pressure. The shop was filled with the ungodliest drone that has ever been heard by human ears.

I glanced anxiously at the voltmeter and saw the slender needle swoop along the dial and hang precariously over the hundred-thousand mark. The batteries racked in scores on the wall murmured and sputtered, and far back in the shop a pair of dynamos whined. Manson made a few quick adjustments

until at last the drone died away to a whisper.

"This is a great moment for the both of us," he said. "Music of the spheres and all that. Lord! How I've waited for this moment. Listen, Grout. I'm going to switch on the amplifier."

Dazed by his impetuosity, I stood there helplessly as he turned on the system, and followed his eyes to the enormous speaker that hung overhead. He twisted the dial slowly until at last we heard a hazy sound, dimly, like surf far in the distance. We stood poised and tense, waiting for the tell-tale song of the atoms—waiting and listening.

Then it came, a faint roll of clicks, like a hail-storm on a window pane. Manson sighed and gave me a smile.

"What do you say, old boy?" he asked. "Crack-brained, am I?"

I didn't answer, for I was listening to that astonishing sound, listening to the miniature patters of energy dancing within the glowing globe. Listening to it as it grew from a patter to a rattle, from a rattle to a knocking and from a knocking to a muttering rumble that pounded at my ears with the impact of a gigantic bass drum—steadily louder and louder, deafening, thundering. A monstrous bass drum beaten by a pair of giant sticks moving with infinite rapidity.

"For God's sake," I shrieked, "turn down the loudspeaker!"

Manson darted to the board and twisted the dial. The thunder filled the room until everything shook and squeaked. Then he turned and showed a pale, frightened face.

"What's up?" I called.

"I don't know." He gesticulated helplessly toward the apparatus. "I've got everything turned off. Dead. And it's still going on."

I stared stupidly at the dais and suddenly I realized that the thunderous knocking was emanating from the tank itself. I saw that the steel globe was vibrating incredibly fast, gradually shaking loose from its fittings, and already crawling around the table like a basketball with St. Vitus dance.

"What's up?" I repeated.

Larry watched the rumbling thing crawl over the table, smashing and

crushing, and shook his head blankly.

"I don't know," he answered. "Thank Heaven, you're here!"

Then above the thunder and crash of smashing equipment, we heard a shrill, tearing scream and a shattering explosion of tortured metal. In an instant the sound ceased, and in that very same instant both of us were sent reeling backward by a shower of molten metal and a blaze of incredibly blinding brilliance.

We managed to crawl on hands and knees to the far end of the shop and yet when we turned and tried to observe what was spinning and blazing over the dais, it proved impossible. It was as though we were attempting to stare, open-eyed, into the very core of the noon sun. Then Manson tugged my elbow and motioned with his head, and I crawled after him into the little study that adjoined the laboratory.

"Quick!" he gasped. "We've got to do something about this! The place'll be in flames in another minute. Suffering cyanide! Grout, what is it?"

I shook my head and pawed through his diagrams and equations that were still clutched in my fist, and probed desperately for that missing factor I had noticed vaguely before.

Through the closed office door, we could hear the dry whine, and shafts of blue-white radiance shone through the slits between door and jamb. Larry Manson fumbled clumsily at his desk and in another instant produced a pair of smoked glasses. He broke them hastily and handed me a dark lens.

I HAD to peer through a slitted eye in hasty glances, so strong was the light. I could make out a tiny glowing ball of radiation, spinning over the dais—spinning and sparkling like a miniature sun. Even as I watched I could see it was drifting gently toward the wall and I knew that as soon as it touched the cement would be a running river of lava.

Turning back to the crumpled plans I tried to check on the second half of the procedure. Roughly, he had set up the Healy field within the thick shell of micro-steel, surrounding the few remaining atoms of hydrogen. The wiring plan looked right enough but—I

blinked my eyes dizzily and tried to concentrate.

Manson went to the door, took another peek and came fretfully back.

"I don't know whether we'll burn to death or be electrocuted," he muttered. "If the heat takes the insulation off those batteries—"

And that gave me the clue.

"Idiot!" I said. "You forgot insulation. You've poured billions of volts into that tank—millions of ergs of energy into those few atoms of hydrogen. They've recombined to form a ball of molecule—and you've filled it with energy until it's swollen like a sponge."

"But the light? The heat?"

"That's dissociation energy. It's liberated as radiation whenever atoms recombine to form a molecule."

There was a searing crash and a curdling crackle of flowing matter. We darted back into the shop, to see a great dripping hole smoking in the wall and the flaming molecule drifting slowly outside in the afternoon sun that looked pale in comparison. We skipped around a little until the stream of molten concrete had set. Then I decided on a hasty plan.

"Smoke two pair of heavy goggles," I ordered, "then have someone rush a dozen curtain-sized sheets of asbestos and half a dozen asbestos flame suits here. Send down every available man. We've got to dismount your Radley and pile it, accumulators and all, into the tractor-truck."

Manson darted off, and within a few moments we were at work with four bewildered men, getting the equipment into the truck. The heavy magnet was hastily braced over the motor hood and we filled the truck body with rack after rack of the heavy batteries.

As the men worked with us, half blinded by the molecule drifting over the fields, they stared amazedly at the dazzling globule that was illuminating the countryside with eerie radiance. Even I watched it drift off, with terror in my heart, I wasn't sure we'd be able to get close enough to draw the thing within the field of the Radley, or get it over to the dischargers at the M.I.T. laboratories.

Our eyes were aching as we vaulted

into the driving seats and Manson took over the wheel. We snapped the goggles over our eyes and peered eagerly toward the brilliance that was drifting almost a mile off across the New England fields. As the truck rumbled slowly in pursuit I could see the terrified crowds of farmers gathering in little groups, shielding their faces from the blinding light, talking and waving their arms.

EVEN though the goggles were nearly opaque, the escaped molecule was too brilliant for us to look at directly. Manson banged the truck along, following the track of blackened, smoking wheat and corn that had been blazed. And I wondered hopelessly what we were going to do when we arrived. Perhaps if we could just hold the thing over the Radley for a few hours until help came—

Suddenly Larry grunted and poked me.

"I've been watching it out of the corner of my eye," he exclaimed. "It's growing, isn't it?"

I nodded.

"It's mad!" he said. "A crazy, mad molecule. How could it grow like that? There's no more energy pouring into it."

"Coulomb's law breaks down," I explained wearily. "Smell the ozone? That's the track of ionization that's following that confounded thing—same as this scorched summer wheat. Every atom of every molecule of air it touches is smashed wide open by the energy in that molecule. Protons of atomic nuclei defy the law of opposites and attach themselves to the mass. Yes, it's taking on mass and energy steadily. It's growing in geometric steps, too—four-eight-sixteen, and so on."

"Then?" Manson stared at me in the weird light.

"Yes, you've guessed it, Scientist Manson. It'll grow slowly at first, but after today or tomorrow—" I shrugged. "A couple of light centuries from now astronomers on the other side of the galaxy are going to observe a magnificent nova where the Solar Universe used to be."

"Can't we do anything at all?" Manson sobbed.

"We might now, when it's comparatively small. Not later. Then there wouldn't be enough energy in the Universe to neutralize that amount of radiant energy. Oh, Larry—if only I hadn't been so upset this afternoon, I might have—"

Then we were close to it and the furious heat made us gasp. Manson slowed down the truck to a creep and we followed gingerly. At last when we were as close as possible I switched on the Radley and prayed. If we were lucky—very lucky—we might be able to get the mad molecule over to the university lab and blast it down there.

The Radley hummed and droned and Manson crept the truck closer until the glass windshield cracked and splintered under the horrible heat. I felt my face blister up in an instant and crack hideously, and still he inched us forward while the mechanism trembled and the batteries behind us rattled precariously.

"Can't get much closer," he choked.

Then I howled hoarsely and pointed. The blazing mass had halted its drift and was slowly edging toward the truck, moving toward the upright poles of the Radley.

"Let's get out!" I screamed, as it increased its speed.

We tumbled out of the seat and ran, stumbling backward through the field. We tripped and fell at last and rolled over on our backs to watch. As the molecule drifted over the pole and settled lower and lower, I wondered how long it would take to get the asbestos sheets and suits up to York. The small sun swooped down, touched the pole, and at last was still. Manson rolled over and pounded my bruised back exuberantly.

"That's done it!" he croaked.

I NODDED doubtfully and kept my eyes on the truck, for I was remembering the concrete wall of his lab that had melted like butter.

"Come on," continued Manson. He began to struggle to his feet. "What do we do next?"

I grasped his arm, yanked him back to earth quickly, and threw myself over on my face. There was a thundering explosion and in another instant we were hit by a thousand sharp fragments

and a million droplets of biting sulphuric acid. The truck had blown up.

We started to our feet and tried to rip the burning, acid-splattered clothes from our backs. Manson was half fainting and groaning dully, and even as I helped him as best I could, I saw, from the corner of my eye, the blazing, scintillating molecule, slightly larger, go drifting off once more.

"We've got to phone for help," I whispered hoarsely. "This thing is too much for us now."

I dragged him along beside me, and the two of us, almost naked, went panting back through the burning fields. The flames roared and seared us with their raw breath. Larry Manson was only semi-conscious and I was almost done in myself as we went gasping toward the house.

I felt the heat of the raging fires on my back and the hundreds of blistered burns over my skin. I was almost delirious by the time we sighted home, and it seemed that I could feel fresh drops of acid eating into my skin.

They fell, harder and faster, until, as I ran, a sheet of something cold and biting smashed me full in the face. Choking, I peered about and at last pulled off the black goggles that were still over my eyes. There was a clattering roll of thunder behind me and, supporting Manson with one arm, I craned to see the black sky of a summer thunder-storm, the under side of the low clouds illuminated with a weird light.

Suddenly a blinding bolt of lightning pierced down through the blackness, the ground shook underfoot, casting us violently to the earth again. And even as we fell my head was almost split open by a roaring blast of explosive thunder that sounded like the clash of worlds. I lay prone, with Manson alongside, as cyclonic wave of scalding, suffocating air swept over me.

The next few hours were chaotic. I dimly remember crawling in an agony through the drenched bracken, being found at last and carried, moaning, to the house with Manson, lying dully in our beds and listening to the others talk curiously about the strange meteor that had floated over the fields and at last exploded, the thunder-storm and the queer hurricane. At last when I was

well enough to get up and drive home. Manson and I limped to the shattered shop and eyed each other for a silent moment.

"THANK the Lord that people think it was a natural catastrophe," he said fervently. "I'd be paying damages bigger than the National debt."

I nodded and continued to give him an accusing glare.

"Well, Grout," he said, sighing uncomfortably, "I guess I'll take up gardening."

"Thanks," I answered, and I was sincere.

"But—"

"No 'buts,'" I went on hastily. "Forget about science for awhile—forever. I'll explain what happened, but I don't want to hear you mention science again. You—you world-murderer, you."

He nodded and gave me a sickly grin.

"It's simple and lucky," I said. "The lightning did what I'd intended doing myself. Bolts of lightning may have a current of over two hundred thousand volts and a charge of more than thirty coulombs. The one the other day was especially strong and it did the trick. You know how physicists smash the atom? Well, that's what happened

here. The molecular energy was dissipated in the near-volcanic heat wave that blasted us after the thunder-clap. The same wave people call the hurricane."

He nodded again and soberly accompanied me to my car. He shook hands devotedly and mentioned something about a check in the morning. Then I crawled in and drove off down the road. But the heat must have weakened my tires for as luck would have it I had a blow-out before the very same hamburger stand where I had stopped off on my way up.

As I paced about impatiently, waiting for the repairs to be completed I saw Jabez Jackson, rain-maker, descend from his porch and come toward me, leering.

My first instinct was to run, then I decided to put up with him.

"Hi!" he cackled. "Hi, Doc. Hear yuh been runnin' around in a high wind chasin' shootin' stars."

"Well," I said, "are you trying to tell me you produced them?"

He gave me a crafty glance.

"None o' them, Doc," he answered with outstretched hand. "Jest the rain. That was all mine."

I paid—either out of gratitude to him or to Providence. Right now I'm not sure which.

**It's Up to Gerry Carlyle
to Bring Back the Solar
System's Most Dangerous
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TROUBLE ON TITAN

A Complete Scientifiction Novel

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FEATURED IN THE NEXT ISSUE

THE GREEKS HAD A WAR FOR IT

By **KELVIN KENT**

Author of "Man About Time," "Science Is Golden," etc.

Pete Manx Rides Again When Three-Score Men in a Trojan Horse Wage a Blitzkrieg for a Blonde!

DR. HORATIO MAYHEM and Professor Belleigh Aker stared around the sumptuous office in astonishment. They saw overstuffed furniture, soft carpets, a desk. On the desk was a pair of feet, behind which grinned the shrewd features of Pete Manx, Time Traveler Extraordinary.

"Get a load," Manx advised, "of the ad in this ayem's *Times*." He indicated a folded newspaper. Smugly, he brushed invisible dust off his mauve tie, adjusted his checkered coat, and tipped his gleaming derby to a rakish angle.



Pete Manx

The two professorial heads dipped as if attached to the same drive shaft. The advertisement, inserted by Historical Research, Inc., Peter Manx, Pres., solicited clients interested in the same—novelists, motion picture people, students, or what have you. The Past was an open book, the ad maintained. Any question about any era would be answered accurately and in detail by Manx's organization, via the famous Time-chair, for a nominal consideration.

"What on earth," breathed Mayhem in awe, "does this mean?"

Pete smirked.

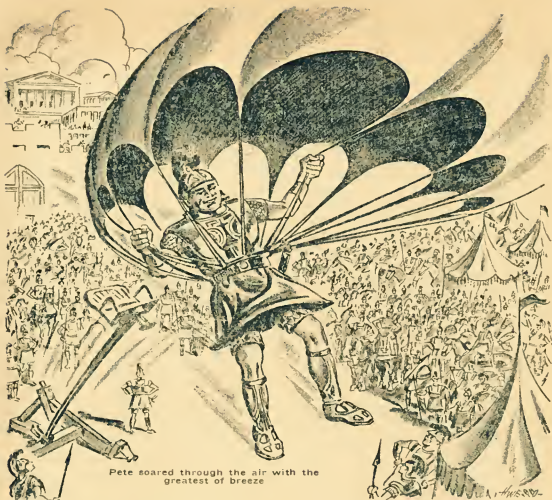
"It's a cinch, Doc. You been strapped for dough for them experiments of yours, so I fixed it how we can make plenty. Let's say a guy wants to know somethin' about the Past. Well, all he has to do is tell us when it happened an' we go back in person an' find out about it—right on the spot! In your Time-chair, see?"

Aker laughed, a hollow, scornful laugh. "That, my good man, is ridiculous. No one would believe you."

Pete looked complacent.

"No? Well, I already got a customer lined up. He phoned in, an' I told him how we work. He's interested, an' he'll be here in about five minutes. Wants to find out about them old Greeks. I been readin' up." He displayed a book, "The Life of the Ancient Grecians." "In the back room I got a duplicate of the Time-chair pretty well set up. They know me pretty well around your lab at Ply-

Featuring Pete Manx, Year-Leaper!



Pete soared through the air with the greatest of breeze

mouth U. So I had a coupla workmen look the thing over an' make a copy. The final delicate adjustments'll be up to you, of course."

Mayhem was dubious.

"But I have no desire to commercialize my invention. I am a pure scientist—"

"You mean you're a poor scientist. Stick with me, kid, an' you'll wear diamonds. No more pesterin' your department head for dough." He glanced shrewdly at Professor Aker.

Surprisingly, Aker agreed with Pete.

"Manx—er—has something there," he said warmly. "Your experiments have been running us into debt lately, Dr. Mayhem. What with our endowment income shrinking yearly, and philanthropists becoming an extinct species, it might be wise to capitalize on your achievement."

A timid knock sounded on the door. The visitor proved to be an ema-

ciated, long-haired man of indeterminate age, with spectacles and unpressed clothes. He had the sad expression of a bloodhound. Vaguely he announced himself as calling in response to the ad in the morning paper.

"I am Henry Larose," he said gloomily.

Mayhem and Aker looked interested. Larose was a famous historical novelist, with one best seller and three motion pictures to his credit.

"The situation is simple," sighed Larose lugubriously. "I am doing a fictionalized treatment of the life of Helen of Troy and the Trojan War." He shook his head in sorrowful contemplation. "There are difficulties. Source material is a hopeless confusion of fact and legend—a mess of stuff about gods always interfering. I don't know why I bother . . . However, Mr. Manx claims to be able to return to this era. If so, perhaps you could learn what really went on at the fall

of Troy. Separate history from myth. I can scarcely believe such a thing possible, but—"

Mayhem swelled indignantly.

"Sir! We are not fakers! Our representative, Mr. Manx, can go anywhere in history I choose to send him. The sense of progressive Time is an artificial thing, self-imposed by humans to bring order and regulation to their affairs. Actually, all Time is co-existent, a sort of cosmic circle bounding the Central Time Consciousness. We release the mind into the Central Consciousness where, under the influence of a sort of psychic centrifuge, it is whirled out again into the mind of a person in any age we select. History is like the rim of a wheel, with Time the hub—"

"Oh, dear," murmured Larose wearily.

The didactic Mayhem could not be stopped so easily.

"This is not an abnormal thing, but rather the fruition of what all human minds strive to do daily. Man constantly contemplates the future, or reminisces of the past. Unconsciously his Time sense tries to break the barriers holding him to the present moment. With my Time-chair, we give impetus to this struggle for psychic Time-freedom—"

"I have heard," interposed Larose mournfully, "of the Time-chair."

Mayhem swelled, beaming.

"Ah, then you know what we can do?"

"Scientific journals mention your work cautiously. Word-of-mouth rumors are getting around. You can't hide a Time-chair." Larose spoke cheerlessly. "You will probably be a famous man soon, Doctor. O, fame." He buried his head in his hands.

Mayhem almost puffed with content. Pete interposed.

"So let's can th' gab, fellas," he snapped. "The guy wants us to take a gander at the Trojan War. What's holdin' us back?" Then he remembered. "Oh, yeah. The fee. Ancient Greece bein' a long ways back, it'll cost you five hundred smackers, Mr. Larose."

The novelist promptly counted out the required sum. In melancholy tones,

he said, "An eye-witness account of the siege of Troy would be worth twice that much. But how can I assure myself that I won't be the victim of a fraud?"

Pete blushed, admitting honestly to himself that there might be some cause for doubt. He knew his capabilities. On the midway, or at a sideshow, or from door-to-door, Manx was a supreme, fast-talking salesman. But his talent did not extend to inducing the upper classes to invest in intangibles. As he pondered, the sound of tinkering came from the back room where Mayhem was already absorbed in putting the finishing touches to the new Time-chair.

FORTUNATELY, Professor Aker came to the rescue.

"As chairman of the physics department at Plymouth University, I think I may claim an unimpeachable character," he declared impressively. "I have been associated with Time-traveling in the past, and frankly, the idea of seeing Helen of Troy intrigues me. If it would reassure you, Mr. Larose, I would take the trip with Manx myself."

Larose laid down the five hundred without further ado. Manx pocketed it, then glowered at Aker.

"But remember, guy, no monkey business. Ye're just goin' back to see what happens. No mixin' into things an' gettin' in trouble, see?"

Aker smiled haughtily.

"You need not fear. I intend to play the role of innocent bystander, strictly. I have never tried to change the course of history," he ended pointedly.

"Okay, okay. Skip it. Let's go." Pete led the way into the back room, to find Mayhem had already finished the few remaining hookups. The Time-chair, constructed unusually wide so as to seat two persons, was ready. Without further argument Manx and Aker seated themselves side by side, while Mayhem adjusted the electrodes around head and wrists of the travelers.

"A month back there should be enough, shouldn't it?" suggested Dr. Mayhem. A month was agreeable.

Dynamos whined, arcs arced, converters converted, and transformers transformed. Mayhem threw the famous switch that had caused more than one upheaval in the days of yore.

Larose, in Pete's line of vision, began to show some signs of animation. He jiggled, then wobbled; his outlines began to blur and fade. There was a sickening sensation, a cosmic wrenching—

“ARE you ill, Captain?”

Pete opened his eyes upon a wide plain bathed in blinding sunshine. The plain heaved once uncertainly, then settled back. Blinking, Pete shaded his eyes from the hot sun till the momentary dizziness passed. Then he turned to the man beside him.

The latter was a middle-aged, hard-bitten warrior. He was dressed, as was Pete, in helmet, cuirass, and greaves to protect the legs below the knees. Both wore short swords. Judging from the wealth of insignia on his uniform, the tough-looking battler must be none other than Agamemnon, himself, commander-in-chief of the Greek army.

“What did you say?” asked Pete, and shrank in terror at his own voice. It was tremendous, a roar that would have filled the Coliseum, or would have leveled the very walls of a lesser structure.

The battle-scarred veteran smiled admiringly.

“You are in fine voice today, Captain Stentor. I merely asked if you were ill. You staggered, and the sun has been hot—”

Pete was quick on the up-take. Already he began to get the picture. He had returned to the glory that was Greece in the mind of the famous Captain Stentor, who reputedly had been able to command ten thousand troops by just the sound of his mighty voice. Also, Pete recalled reading, Stentor had been respected because he was apparently able to commune at will with the gods.

Pete's chest thrust out. At last! In other eras he had been a lowly thief, a slave, a bum. But now he had inherited a position worthy of his mettle.

“Just watch my smoke!” he muttered to himself.

Pete gazed about the Plains of Ilium proudly. There was a military encampment stretched out almost endlessly, tens of thousands of tents, chariots, soldiers, and their accoutrements. Weapons flashed distantly as raiding parties sallied out to scour the countryside for food. A hundred thousand Greeks, reflected Pete, and not a single restaurant. He smiled.

Remembering his companion's suggestion, Pete seized upon the suggestion.

“Yes, Agamemnon, I have had a touch of the sun.” It afforded a ready-made alibi in case he had to ask any awkward questions, such as:

“Er—this is the siege of Troy, ain't it?”

The Greek looked strangely at Pete. “Indeed it is, Captain. Yonder lies Troy.”

Pete looked, saw in the distance a moderate-sized fort. It seemed not more than a few acres in area, surprisingly small to have withstood the siege of thousands of determined Achaeans for so long. Still, Pete shrugged, it was none of his business. He was there to observe, to get the story and see the climax of this great spectacle, the fall of Troy. He started toward the army encampment, when a sudden thought smote him disturbingly.

“Say! How long has this war been goin' on, anyhow?”

“Why, for nine years, 'as the captain well knows. Has the sun-god Helios stolen your memory?”

“Nine years!” Pete groaned. The Trojan War had lasted ten years. Dr. Mayhem, uncertain of his calculations with the substitute Time-chair, had missed his mark a trifle. In order to get what Larose wanted, Pete would have to hang around for months dressed in this umpire's get-up. And that was out of the question. Why, he'd miss the World Series.

Desperately in search of counsel, Pete glanced about.

“Aker!” he let loose with his foghorn voice. “Professor Aker! Are you anywhere around?”

There was a great stirring among the nearby Greek soldiers, but puzzled

smiles and ribald jokes directed at Captain Stentor's shout. But no one answered. Evidently Aker was not in the immediate vicinity. Or perhaps, Pete snickered, he had returned in the mind of one of the mongrel hounds which slunk scavenging about the camp.

At any rate, the decision was strictly up to Pete. He communed briefly with himself. Though he had vowed not to become involved, nevertheless the circumstances obviously called for action. Yes, Pete was forced in the name of business ethics to deal himself a hand in the Trojan War, and wind it up before his month was out.

Happily—for Pete was one of those individuals cursed with an incurable itch to meddle in other's affairs—he strode to the center of the camp and jumped up on a chariot wheel.

"My-y-y friends!" he bellowed tremendously, threatening to blast away the tents on the wings of his wind. "Come one! Come all! Gather 'round, folks! It's th' gr-r-reatest show on earth!"

In short order he had a military audience of fifty thousand curious Greeks.

"Men!" Pete roared with his magnificent tool for propaganda. "We been fightin' this war for nine years an' nothin's happened decisive yet. Am I right?"

There was a murmur of agreement. Pete pointed dramatically toward the walls of Troy.

"Nine years, and yonder still stands the insolent aggressor, barring the path to our manifest destiny. The Trojans refuse to face things realistically, to acknowledge that the world has to be remade to conform with the rights of us Greeks, the superior race. We must have living space!" Pete winced inwardly at the hollow illogic of these catch phrases. Still, he had a legitimate reason for this rabble-rousing.

"Within those walls suffers an oppressed minority," Pete thundered. The kidnaped Helen, he figured, was certainly a minority. "It is our duty to free that minority and—uh—establish a new economic order!" What

was this nonsense? However, it was no less effective in 1194 B. C. than it was to prove some thirty-one centuries later. "We must be prepared to make every sacrifice in a final assault to annihilate the enemy. Are you ready?"

"Yea, yea! Hear, hear!"

A few minutes of this had the Greeks thoroughly aroused. They understood nothing, but they were mad at somebody. "Last night," Pete announced, "I was visited by the—er—gods. By revelation was given me the means whereby we may accomplish the destruction of our enemies. Secret weapons will devastate them. . . ."

Eventually, Pete tired of his oratory and stepped down with a promise of quick victory. Agamemnon awaited him, looking puzzled.

"I do not understand, Captain Stentor, this sudden desire of yours for quickly ending the war. We are enjoying ourselves now. Few on either side are suffering injuries, which is well since we do not hate the enemy particularly. Another year will see the starving Trojans forced to surrender."

"Blockade!" snorted Pete. "That's no good these days. What we need is Blitzkrieg, not Sitzkrieg!"

Agamemnon shook his head, mystified.

"Your words are strange. But if it is immediate victory you wish, why not give our plan of—"

Pete brushed aside the impending suggestion.

"Look, Aggie. I got something you never heard of. Tanks! We'll take Troy by storm."

"Tanks?"

"Sure. You'll see. All I need is a bunch of chariots and some skilled workmen. Armorers."

A GAGEMEMNON agreed in puzzlement. By nightfall the materials and workmen would be ready. Pete Stentor retired to his tent, took up papyrus and quill, and commenced to draw designs for his new engine of warfare.

"Blitzkrieg ba-by," he hummed as he worked. "You're my little bomb-shell-l-l of lo-o-ove!"

The Stentor Tank was simplicity itself. Two chariots were lined up rear to rear, joined by two ten-foot shafts. Then light armor covered sides and top, with apertures through which to shoot. Completely protected, in between the shafts, would be a horse. He wouldn't be able to move such weight very rapidly, but then, the idea of the tank wasn't speed, anyhow. The entire contraption would carry three archers and ammunition.

Once the specifications were standardized, production moved apace. In four days' time, the Stentorian motorized armored division was ready to move. The attack was launched one morning with dozens of the fantastic-looking tanks rumbling laboriously across the plains of Ilium toward the thus far impregnable walls of Troy.

"They'll move right up under the fort," Pete explained his strategy to Agamemnon, "without danger, and pick off the defenders as fast as they pop their heads above the walls. That way we'll establish fire superiority. Then the infantry can move in at their leisure and bust down the gates. Simple, hey?"

Agamemnon was not enthusiastic. He was a military reactionary.

"If the plan succeeds," he admitted reluctantly, "it will revolutionize warfare."

The tank brigade rolled into position and arrows began to hiss. The Trojans quickly learned they could do little with the attackers, except by occasional lucky shots through the loopholes. In short order they ducked down behind the walls' protection.

"See?" boasted Pete. "Now for the final—er . . ."

Strange things were happening outside the ancient walls of Troy. A hand, holding a pot, reached over the parapet and spilled some liquid upon one of the tanks.

"Boiling water!" guessed Pete, scoffing. "They can't hurt us!"

A second hand lifted into view carrying a lighted torch. This was cast upon the saturated tank. The latter immediately burst into a low, flickering blue flame. The horse, beginning to cook, began to engage in some mad gyrations. The tank charged forward,

then backed and twirled around in a sprightly dance. Shortly the hastily-constructed contraption fell apart with a bang. Three men and a horse ran madly away from that place, with an occasional Trojan shaft delicately pinking their *derrières*.

Other potfuls of fluid cascaded upon the assaulting tanks; well-aimed torches followed. One by one Pete's panzer division units began to sizzle, going into marvelous contortions. Like a nest of weird eggs, the flimsy machines broke open to hatch out panic-stricken horses and Greeks. The attack turned into a complete rout.

From the officers' vantage point, Agamemnon and Pete watched the debacle. The former concealed a faint smile.

"The art of war, it appears, is not so easily revolutionized, Captain Stentor."

Amazed by the turn of events, Pete began to have a horrible suspicion. How could the Trojans have known of a defense against tank warfare that wasn't developed till the Spanish Revolution of 1936? And how could they develop incendiary fluid? Could it be— It must be! Professor Aker had returned in the mind of a Trojan! Pete fumed.

"I been double-crossed, that's what!" he blustered. "The idea was okay, but I've been knifed by a Fifth Columnist, that's what!"

Angrily Pete rigged up a flag of truce and, under it, drove his two-horsed chariot up to the walls of Troy. Again his terrific artillery rolled out.

"Aker! I know you're in there! Come out and meet me like a man!"

PRESENTLY a young man appeared atop the parapet. He was tall and curly-haired and very handsome. He grinned down at Pete. "Ah, Manx, I believe? What beautiful irony that you, a side-show barker, should have such a magnificent voice—centuries too soon!"

"Never mind the cracks. D'you know this war's due to drag on for months yet unless we finish it off quick? History says so."

"I am well founded in Greek history."

"Well, then, what's the idea obstructin' me? Y'oughta *help* me end the siege so's we can earn Larose's money without havin' to come back again. You don't wanta hang around here for months, do ya?"

The handsome Trojan grinned wider.

"As a matter of fact, Manx, I do. . . . By the by, how did you like my incendiary fluid? I distilled alcohol from wine and—"

"You do wanta stay here!" roared Pete. "Why?"

"That is very simple. I have returned to this glorious era in the mind of a well-respected young man named Paris."

"Paris! Why, you're the guy that snatched Helen!"

"Exactly, my boy. And I may say that Helen is not only very charming, but very much in love with Paris. I am having—er—the time of my life. Wow! I've no desire to see this war come to a sudden end."

Pete spluttered indignantly.

"That's treason! Surrender, or I'll liquidate the whole works!"

"Pooh. As a man of science, I have the advantage in war as well as in peaceful pursuits. Do your worst, Manx. Ha, ha! . . . And now I must hasten to my fair Helen's arms. *Au-vair!*"

Pete seethed at this insolent treachery.

"So it's war, hey?" he blazed. "Okay, I'll wage you a war. Scientific war!" He lashed his horses to a gallop as he rode his careening chariot back to the Greek lines.

Once there, he went into executive session with Agamemnon, claiming the entire Greek nation had been insulted. Once again Agamemnon tried to suggest some plan, but was overruled by Pete.

"What we need is silk, lots of it. Can you manage that, Aggie?"

"Yes, but I think our idea about—"

"Forget it, kid. Rustle me tons of silk cloth an' send in them builders of mine in a coupla hours. I'll have another diagram for 'em."

The incongruity of a mere captain ordering about the commander-in-chief did not occur to Pete. He was

too deeply immersed in his plans to teach Aker a severe lesson for having broken his promise not to interfere. Though the catapult was not invented till about 400 B. C., Pete could not wait. He decided to invent the thing himself, from his memory of the excellent diagrams in the encyclopedia he had once peddled from door to door.

After starting the workmen on the construction of the massive but simple catapult, Pete himself got bone needles and thread and began working on a huge sheet of silk, attaching a crude harness to it. When the two new weapons were done, Pete, with courage he never knew he had owned, made a personal demonstration.

Rallying the army around to witness the latest revelation of the gods, he exhorted them boomingly. "Hermes, the winged god, came to me in a dream and bade me organize a corps of parachute troops. It will be new to you, but there's nothing to fear. Behold!"

Pete gathered the parachute loosely in his arms after strapping the harness on, then took his place in the seat of the catapult. A signal to the operator, and—*zun-n-ng!* Captain Stentor, feeling compressed to about half his normal length, sailed head foremost with the greatest of ease.

Thirty feet into the air he flew in a breathless rush, and almost two hundred feet horizontally. At the height of his flight he cast the parachute folds violently from him. It billowed out satisfyingly, caught Pete's falling body with a jerk. He came down with a slamming jolt, but entirely uninjured.

AGAMEMNON and the Achæan soldiers were completely dumfounded. Some were frightened, likening Pete to the gods. But most became quite excited over the prospect of flying in the Stentorian manner.

Pete explained his proposed strategy.

"We'll rig up maybe half a dozen catapults on wheels, an' make a flock of parachutes. Then one night we'll roll the catapults up close to Troy—far enough back so's we can't be seen in the darkness, but close enough to

shoot our troops over the walls into the fort. Twenty or thirty brave comrades oughta be plenty. They'll parachute into Troy an' open the gates for the rest of the boys. See?"

The Greek camp was wild about the idea, with volunteers by the hundreds offering to act as parachuters. Pete chose small, light men for obvious reasons, then set his workmen on the tasks of building catapults and sewing parachutes and harnesses. Captain Stentor was but definitely a big shot now, with his special pipeline to Olympus.

Within a week all was ready for the assault at the dark of the moon. Six catapults were rolled into position with the secrecy of a herd of marching elephants, and the foolhardy parachute company lined up for execution. Presently six *zun-n-ings* sounded in the night; six dim flowers blossomed in the blackness high above Troy as the practiced catapulters swayed down toward the earth.

But before Pete could express satisfaction, a strange phenomenon occurred. A flaming streak shot into the air, then another, and still others. The fiery bolts struck the billowing parachutes, which caught fire. Quickly the frantic parachutists came down in flames, their only thought to free themselves from the devilish contraptions that threatened to burn them alive. A crimson glow lit up the interior of Troy, as if a furnace had been opened to the sky.

"Fire arrows," muttered Pete hopelessly. "Injun stuff! Well, that beats me. Darned if I know what to try next."

The abortive parachute-troop attack having been countermanded by Captain Stentor, the fires within Troy quickly died out. Then the mocking voice of Paris rang out over the black Plains of Ilium.

"Try again, Manx! You are very amusing, my boy. It might make you feel better to learn that none of your parachutists were injured, save for minor burns. But by all means think up another trick. Only don't reveal your hand by practicing your new stunt in full view of Troy. It makes our defense too easy!" There was a

professorial snicker, then silence save for muted sounds of revelry within the fortress.

Pete seethed with frustration, then gave way to despondency. It seemed he was doomed to stay here till the war dragged to its legitimate close. He looked up suddenly.

"Huh? Did you say somethin'?"

It was Agamemnon, urging Stentor now to consider that scheme they intended to try some time ago.

"Your own god-like weapons were ingenious, Captain Stentor, but perhaps the gods, having given us the weapons, also gave the proper defense to the Trojans so as not to show favoritism. But my plan can be known to no one, not even the gods. Hence, Troy cannot withstand the strategy."

"Okay. So what's the gag?"

"We shall build a mighty wooden horse, fill it with brave warriors, and leave it before the gates of Troy. Then the army shall withdraw from sight. When the Trojans, overcome with curiosity at our gift, drag it inside the fort, at night our men will steal forth to open the gates for the army!" Agamemnon smiled grimly.

PETE groaned.

"The Trojan horse! That tomato is old as the hills! Why—" He paused as realization dawned that here was the original occasion upon which the wooden horse made its mark in history. Yet, irony of ironies, Aker, now carousing with Helen no doubt, would never fall for that trick. "Nope, 'sno use. That guy Paris is wise to the horse business."

Agamemnon frowned.

"Your words are strange, Captain Stentor. How could that dog Paris possibly know of what is in my mind only?"

Pete opened his mouth, then shut it again. He couldn't possibly explain the situation.

"Lemme think this over, Aggie," he said, stalling.

History, Pete knew, recorded the success of the Trojan horse. So perhaps they should go through with it. Yet it was only too obvious that history was going to need some assistance. Aker would know what was in-

side the horse. The question was: what would he do about it? Pete put himself in Aker's shoes. No doubt, as Paris, he was the toast of Troy right now because of his military successes. Probably pretty cocky.

When Aker saw the wooden horse, instead of ignoring it, he would in all likelihood drag it right inside and proceed to annihilate the luckless Greeks in an effort to impress himself further upon the populace. How would he liquidate the Greeks? Well, he had been having good luck with fire so far; probably he would give the Trojan horse the hotfoot.

Pete pondered, and finally an idea blossomed in his fertile brain, came to fruition.

"Aggie," he declared, "the plan is not so bad, after all. But it wouldn't hurt to have an official okay. So I'll make a trip to the Delphic Oracle and get the lowdown. Meantime, you go ahead and build the horse. By the time you've finished, I'll be back with a message from the Oracle. Okay, kid?"

Agamemnon nodded vigorously, having made some sense out of the strange jargon. The old warrior felt he had a good scheme, and he was just superstitious enough to want a favorable opinion by the Oracle before going ahead.

"Our stores are at your disposal, Captain Stentor," he said affably.

"Well, I won't need much. A ship and crew to take me to Delphi—"

"A penteconter will be ready in the morning."

"And I'll need a lot of containers—you know, jars, clay bottles, and so on."

"They shall be placed aboard the ship."

"And a bicycle pump."

"Bicycle pump!" Agamemnon drew back in alarm at this strange syllabic outburst.

Pete covered up hurriedly. Evidently they didn't have bicycles or pumps in these days. "Er—something the gods mentioned to me. I'll have them artisans of yours help me fix it up. Okay?"

The bewildered Agamemnon agreed and withdrew, thankfully, to his tent.

He was secretly glad to be rid of the dynamic genius of Captain Stentor, even for only a few days.

With help, Pete quickly built his crude pump. The main cylinder was made from a hollowed-out young tree resembling a willow, about an inch in diameter. A plunger was easily carved and greased so as to be airtight. At the lower end a flap-valve, made of reinforced leather, was installed. Just above this, a smaller tube of hollow wood was joined to the cylinder, also with its flap-valve.

It worked perfectly. Raising the plunger filled the pump with air. Pushing down forced the valve shut and made the air escape through the smaller tube into the bottle or other container prepared to receive it. Quite satisfied, Pete boarded the fifty-oared craft and set sail for Delphi, some two hundred miles away, in a straight line, on the Corinthian Gulf.

PETE discovered the Delphic Oracle to be guarded by a Pythian priestess and several prophets, who had quite a racket interpreting the hissings and rumblings that went on inside the famous cave. For a nominal fee, a layman could enter and ask his questions in person. But invariably he came out staggering dizzily, and had to cough up another fee to have the priest explain what went on.

Pete grinned at this brazen trimming of the suckers. He tossed a coin to the chief prophet, chewed the sacred bay, and drank from the spring Castos. Then he entered the cavern dragging a huge sack behind him. This was filled with narrow-necked bottles and gourd-shaped pottery.

The cave narrowed down quickly to a series of fissures at the rear, from which came a noticeable draft. Pete took several whiffs from one of these, and the world began to spin. He backed away nodding. His memory had served him well. Not long before this adventure commenced, away ahead in 1940, Pete had read a newspaper article about the Delphic Oracle. It had explained that the Oracle's cave was filled with carbon dioxide, and other gases in small proportions, coming from fissures leading deep into the

earth. Petitioners to the Oracle, entering the cave, became so drugged by the gas that they envisioned all sorts of weird things. Hence the reputation of the Oracle.

Wasting no time, Pete inserted one end of his pump into the gas vent and smaller tube into the slender mouth of one of his clay bottles. Then he began to pump the container full of compressed carbon dioxide to the bursting point. After each container had been filled and stoppered, Pete repaired to the cavern mouth for fresh air before resuming his labors. Eventually all his pots and bottles were full, and he made his way out of the cave again.

The watchful chief prophet accosted him on the way out, demanding suspiciously to know what Pete had within his big sack. Pete looked about mysteriously, and then whispered in awed tones:

"I've captured the Delphic Oracle! I'm taking it home with me! With its wisdom, I'll have all the answers right at hand when my wife asks those embarrassing questions about the night before!"

The prophet, horrified, demanded that Pete disgorge the Oracle at once, if not sooner. Pete took one of his jars, held it up to the prophet's face, and opened it suddenly. A burst of gas momentarily overcame the holy one. He reeled dizzily, and was a very easy mark indeed for Pete's nimble fingers. When Captain Stentor departed, his purse jingled merrily. He had never had any scruples against beating a racketeer at his own game.

BACK on the Plains of Ilium, all was in readiness. A tremendous wooden Seabiscuit had been constructed behind the hills out of sight of Troy. It would easily hold dozens of the daring Achaeans who were volunteering to be included in the suicide party.

Pete's return from Delphi was eagerly acclaimed, and when he said the Oracle had given him the green light, there was great rejoicing. Pete, of course, insisted on leading the daring raid. His insistence that the Oracle had given him some inside tips on how

to conduct the campaign insured him the high position. So sixty Greeks and dozens of Pete's mysterious crocks and bottles were stowed inside the horse.

Pete gave last-minute instructions. Then, at nightfall, the horse was towed to its position before the gates of Troy, and the remainder of the Greek army feigned withdrawal. The die was cast. The wooden Seabiscuit faced the barrier with jockey Manx up.

Came the dawn, and three-score cramped Greeks began to perspire in the stifling confines of the wooden horse. Hours passed, broken by periodic noises outside as the curious Trojans tried to dope out this crazy maneuver. Pete began to have doubts. Had he misjudged Aker's psychology? Would he suddenly turn cautious and leave the Achaeans and their horse just sitting there on the Plains of Ilium, feeling silly?

Suddenly the mighty contrivance jerked forward. Again it moved, spasmodically, as the Trojans heaved on the lines. Soon it was inside the fort, judging by the altered character of the surrounding noises. Then, just as Pete had counted on, Paris' taunting voice called out.

"Ah, there, Manx! Are you inside with your playmates? Tut, tut, my boy. How simple-minded you are not to have realized that I would know all about the wooden horse. Dear, dear, I'm afraid there will soon be a hot time in the old town!"

THERE was a thud against the flank of the horse, a wisp of smoke. Pete grinned. Another fire-arrow. He opened the trapdoor nearest the burning arrow, popped his head out and grinned fiercely. A great yell arose, jeering at the Greeks.

"Fire will avail you nought, men of Troy! Hephaestus, god of fire, has taught me to conquer it! Watch, Aker! How's this for science?"

He thrust out an arm carrying one of his gourd-shaped containers, and unstoppered it. Carefully he turned it upside down above the merrily burning spot on the wooden horse. Nothing, apparently, came out. But the flames snuffed to oblivion in a twink-

ling. The heavy carbon dioxide gas, of course, was death to fire.

The Trojans fell back in superstitious awe at this manifestation of deific power. Paris' angry voice exhorted them, and more fire-arrows plunked into the wooden horse. As each one drove home, another trapdoor opened, another bottle was thrust out, and another flame was quenched invisibly.

In short order the Trojans were filled with panic and began to scatter fearfully. At that instant Pete rallied his men, and the Greeks poured out of the mighty horse toward the now poorly defended gates of Troy. Just as Pete turned to fight a rear guard action and protect the men assaulting the gates, his eye fell upon the tall and handsome Paris standing in a nearby doorway, his face black with rage. Beside him was a buxom blonde, definitely of the Mae West type, whose lusciousness would have upset male metabolism in any era. Helen, no doubt, of Troy!

The war, the Time-chair, everything momentarily faded from Pete's consciousness, and he could scarcely find it in himself to blame Aker. Twenty-eight hundred years before Christopher Marlowe set the words on paper, Pete Manx cried out:

"Is this the face that launched a thousand ships
And burnt the topless towers of Ilium?
Sweet Helen, make me immortal
with a kiss—"

Wham! Helen of Troy leveled on the impudent conqueror with a left hook to the cheek. The world heaved and spun . . .

CLUNK! Pete sat up shaking his head dizzily. He was in the back room of Historical Research, Inc., sharing the oversized Time-chair with an equally dazed Professor Aker.

"Ya-ah, smarty pants," gibed Pete. "I licked you anyhow, didn't I?"

"Zeus, what a woman!" Aker murmured dreamily. "I—"

"Was the trip successful? Did you see the fall of Troy?" It was Henry Larose, accompanied by Dr. Mayhem. He displayed genuine eagerness.

Pete automatically made a slicing gesture of reassurance. "Of course we got back there. Me an' the prof seen the whole thing. It was like this—"

He stopped short, turned to look at Aker. The latter registered appalled embarrassment. They communed silently for a moment, then simultaneously shook their heads. No, it was no earthly use to tell Henry Larose what really went on before the fall of Troy. They would not be believed. Outraged historians would give them the lie.

Pete sighed, shrugged, and dug deep for five hundred dollars. These he returned to the bewildered Larose.

"Sorry, mister. I guess the new Time-chair was set up in too much of a hurry. It—er—didn't work just right. Sorry."

Larose pocketed the money and drifted out in a miasma of despair.

Dr. Mayhem grinned with sardonic knowingness.

"Got things all messed up back there, I'll bet. What happened?"

"This here traitor—" Pete began.

Aker interrupted. "This meddler as usual tried to arrange things to suit himself—"

Exeunt all, arguing.

TIME-TOURIST PETE INTRODUCES THE RODEO
TO ANCIENT GREECE

IN

HERCULES MUSCLES IN A Hilarious Novelet by KELVIN KENT

COMING NEXT ISSUE

SCIENTIFACTS

INCREIBLE BUT TRUE

A SPECIAL FEATURE OF INTERESTING ODDITIES
by MORT WEISINGER

SONG OF THE CITIES

EVERY city has its own distinctive voice!

Sound experts maintain that every metropolis has its own individual singing voice. They can detect this by means of an instrument called the osiso, which "photographs" tone characteristics.

Tests carried out in peacetime London showed the city as a baritone, its



voice being pitched in a low C. It would be interesting to know how the voice of London has changed as a result of the diminished traffic.

New York is a tenor—the pitch of its voice like the singing of wire. Chicago is a bass, its sounds as a whole resembling the hum of a motorcar engine.

THE MOON'S MOON

EARTH had a second satellite—200,000,000 years ago!

Some 200,000,000 years ago Earth owned a second moon, which exploded into fragments. These formed a ring around our planet, like that now possessed by the planet Saturn. This ring shaded the equatorial regions of Earth, causing them to cool sufficiently to create tropical glaciers, in which ice flowed toward the poles.

Such, in brief, is the theory proposed by Ronald L. Ives to explain the large areas of ice which, geologists have found, covered large areas in the

tropics during the Permian period. This lasted for about 30,000,000 years, ending around 190,000,000 years ago.

This second moon—called "Ephemerion"—was much smaller and nearer than the present moon, and revolved, approximately, over the equator. It may have been a minor planet, "captured" as it happened to approach the Earth's gravitational field.

When it approached within 12,000 miles of our planet, "Roche's Limit," it was so close that the tidal forces of the Earth on Ephemerion shattered it into small pieces. These lunar fragments formed a ring which finally disintegrated into meteors.

And that's how Earth lost one of its attractions!

EARTH'S HOTTEST PLACE

DEATH VALLEY is the hottest place on Earth!

Records kept continuously for the past 20 years at Greenland Ranch in Death Valley, California, show average maxima of 94 degrees for June, 102 degrees for July and 98.9 for August. The highest temperature ever recorded in Death Valley was 134 degrees.

The hottest day ever recorded on Earth was chalked up at the town with the sizzling name of Azizia in Libia, where Mussolini's legions passed through to attack Egypt. Azizia's pride is a temperature of 136 degrees Fahrenheit!

TALK OF THE WORLD

HOW many languages are there? Two thousand seven hundred and ninety-six languages are spoken today over the Earth. If to this number are added the "dead" languages, the total comes to 6,760. The tongue most widely used is English. Next

come German, Spanish, and French. These facts were accumulated by the French Academy of Science.

THE PERFECT SHELTERS

WHEN lightning strikes—jump into the refrigerator or the furnace!

These two havens, scientists assert, offer the safest shelters in the event of a lightning barrage. The furnace and the electric refrigerator are solid



metal rooms, which makes them perfect safety chambers. Unfortunately, neither of these places is habitable.

Passing up these two alternatives, it is suggested that an individual simply avoid overhead wires, shun radio, bath, telephone and large metal objects during an electrical storm.

MAN'S MARATHON

EVERY man walks six times around the Earth!

The legs are similar to muscle-motors of great strength. It has been proved that a person takes on the average 20,000 steps a day. Thus, after 70 years he has achieved a total of 500,000,000 steps, which would correspond to a distance sufficient to reach six times around the Earth.

The total expenditure of power expended in these 500,000,000 steps is therefore 5½ billion footpounds!

FLUORESCENT CARPET

A FLUORESCENT carpet which glows brilliantly in the dark has been introduced by a well known carpet concern. The new carpets are especially designed for theater aisles, since they enable patrons to find seats simply by following the luminous path through the cinematic gloom.

The carpet's luminosity does not affect the visibility of the picture on the screen.

FROZEN DOOM

SOME birds can eat continuously—yet die of hunger!

The distribution of small birds in cold countries is not limited by the actual temperature, but by insufficient food for maintaining their body temperature.

For example, when the temperature of the environment of a tiny weaver bird is reduced to 15 deg. F., although it eats continuously it becomes thin and dies of hunger. At 30 to 35 deg. F., which is still cold, the bird thrives. If the day is three to four hours longer so that it can work overtime and get more food, it will survive temperatures of 14 or even 13 degrees.

FLYING FISH

FLYING game wardens are planting fish from the air!

The theory is that if a moose can be served quick lunches from planes, why not shower down fish for fishermen? And it works! The plane used by the aerial game warden carries a water-



filled tank in the cockpit. In the tank are the small fish. At a height of 200 feet above the lake to be stocked the tank is opened, and down the fish flutter.

Recently 15,000 fish—all trout—were sky-planted in the glacial lakes of the Beartooth Range, Montana. It took several flights to dump them all, but they all made fin-point landings.

THIS CURIOUS WORLD

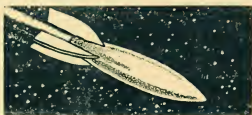
EARTHWORMS have 900 bristles on their bodies with which to anchor themselves in the ground when birds try to jerk them from their burrows. . . . Swallowing occurs involuntarily in humans about once a minute. . . . Fish can't smell. Their nostrils open into a blind sac, and have no

connection with breathing or with the brain.

With no air resistance, a hailstorm would be more destructive than machine-gun fire. . . . Mist has water drops so small it takes two hundred and fifty to make a line an inch long. . . . The whole body has only enough iron to make a single shingle nail. . . . It has been estimated that a Solar System, such as our own, is possible only once in every 6,000 million years. . . . Only young children, idiots and

insane persons cannot be hypnotized. . . . Inside the atom, physicists have found the neutron, positron, electron and photon, some of which live only for .000,000,000,36ths of a second. . . .

The sweat of the hippopotamus, as well as of the giant kangaroo, is reddish in color and resembles blood. . . . If all of the two billion people in the world should count three molecules per second it would take 10,000 years to count all the molecules in a single drop of water. . . . Four hundred million meteors hit the sun every day. . . .



HEADLINERS IN THE NEXT ISSUE

THERE'S an empty cage in the British Interplanetary Zoo. It's reserved specially for the most dangerous creature that ever roamed the surface of any planet—the dermaphos. And Gerry Carlyle, queen of the spaceways, gets the assignment to bring the monster back to Earth—alive!

Catching the thing alive is as easy as counting Saturn's moons. But *keeping* it alive is the problem. For the dermaphos requires an environment that no space ship can simulate.

And, that's the most fascinating sidelight in Arthur K. Barnes' new interplanetary novel, **TROUBLE ON TITAN**, a five-star scientification masterpiece featuring famous Gerry Carlyle.

Lots of other exciting highlights in this novel of pioneer exploration. A rocket-race to Saturn and back, with Gerry's feud with Nine Planets Films, Inc., carried to an explosive climax. You'll find the lady at her daring best in this full book-length novel of spatial thrills. **TROUBLE ON TITAN** is published complete in the February issue, in our special scientification section. Illustrated profusely by Alex Schomburg!

NEW YORK CITY was a stricken metropolis, conquered by a doom that was silent and invisible. Life ran rampant . . . human beings suddenly sprouted third arms, bats evolved into pterodactyls, and vegetation ran wild.

What was the source of this mystery blight? An onslaught from Mars? Science was baffled.

You'll want to read more about this sinister plague in **SLAVES OF THE LIFE-RAY**, a novella of a biological barrage by Alfred Bester. It's a thrilling scientification story of a strange death caused by life's revolt!

DID you know that Muscle-Man Hercules accomplished his famous twelve labors with the aid of Year-Leaper Manx? Which means at least a dozen laughs in store for you in Kelvin Kent's hilarious new time-traveling hit, **HERCULES MUSCLES IN**, a novelet of Manx' labor daze. Bigger and better anachronisms in Kent's latest comedy as Time-Tourist Pete introduces the rodeo to the riders of the Grecian age. You'll want to yell "Yipee!" as Cowboy Manx and his band of buckaroos git along with their dogies in the land of the gods!

THE North American continent, seen from outer space looked normal. Suddenly spatial observers blinked their eyes in amazement. For the whole surface of the continent had become a huge terrestrial signboard that screamed in letters of fire: "Save Earth." What was the reason for this mammoth message? Oscar J. Friend gives you the answer next month in **BLIND VICTORY**.

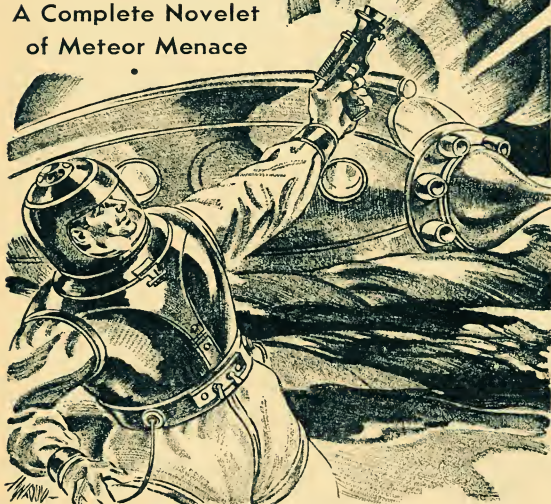
OTHER distinctive stories by famous fantasy favorites in the February issue of **THRILLING WONDER STORIES**. And our regular star-parade of exclusive features, **SCIENTIFACTS**, **LOOKING FORWARD**, **THE STORY BEHIND THE STORY**, and others. And Sergeant Saturn fires all his rocket jets in **THE READER SPEAKS**, the brightest readers' department in scientification. And don't forget—T. W. S. is the only monthly fantasy magazine with a long complete novel in every issue.

SECRET OF THE COMET

By **RAYMOND
Z. GALLUN**

*Author of "Red Shards on Ceres,"
"Old Faithful," etc.*

A Complete Novelet
of Meteor Menace



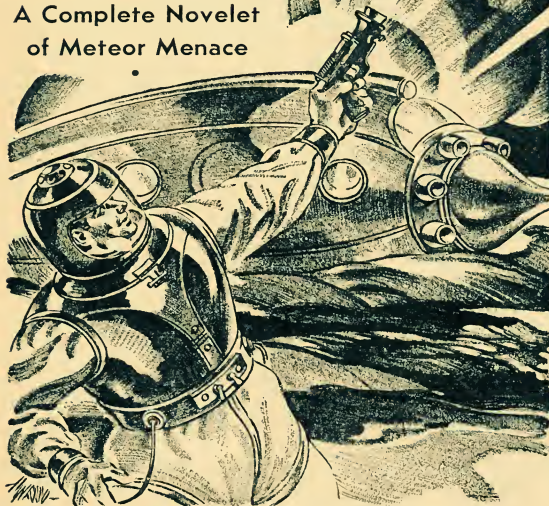
Tensely I watched as Spud worked the blast pistol as fast as he could

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Space Ships DON'T Land when
Two Explorers Find the Key
to All Interplanetary Traffic!

CHAPTER I

To Prison and Back

METEORS? Yeah! They've done a lot of things besides drilling holes in space ships, and making widows out of girls reckless enough to marry space men. They've built fortunes for clever chair-warmers—fortunes that amount to blood money. They've choked invention. And they brought my kid brother, Spud MacCauley, a ninety-nine-year stretch in Alcatraz.

He was a goat, of course. The goat of a guy whose clever lawyers knew how to twist honest law, who knew how to get Spud and Doctor Avery refused permission to experiment. Things in space are dangerous, and you can't let everybody monkey around with experiments. But if there ever was a fellow qualified to cut down death in the void, it was Doctor Frank Avery. Already he had won one minor victory against the meteors, and then it was practically pirated from them.

Nicolas Lorson, of Lorson Ether and Interplanetary Projects, had all research cornered by his own so-called experts. He could use his influence to get legal permission to experiment refused any scientist out of his control. He didn't want space ships improved a lot—it might widen his business, but improvements cost money, and his exorbitant profits on Martian Mota Crystal and antiques, and Venusian medicinal herbs would fall with the increased supply.

So Avery and Spud defied the law. They set up their test station out there on the Silver Pall, a short-period comet that had established itself in the Solar System the year before—that is, in 2152.

Spud came back to Earth alone for supplies, and that's where they got him. The plague had broken out in America, a highly contagious glandular disease that was fatal in five days.



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To Prison and Back

METEORS? Yeah! They've done a lot of things besides drilling holes in space ships, and making widows out of girls reckless enough to marry space men. They've built fortunes for clever chair-warmers—fortunes that amount to blood money. They've choked invention. And they brought my kid brother, Spud MacCauley, a ninety-nine-year stretch in Alcatraz.

He was a goat, of course. The goat of a guy whose clever lawyers knew how to twist honest law, who knew how to get Spud and Doctor Avery refused permission to experiment. Things in space are dangerous, and you can't let everybody monkey around with experiments. But if there ever was a fellow qualified to cut down death in the void, it was Doctor Frank Avery. Already he had won one minor victory against the meteors, and then it was practically pirated from him.

Nicolas Lorson, of Lorson Ether and Interplanetary Projects, had all research cornered by his own so-called experts. He could use his influence to get legal permission to experiment refused any scientist out of his control. He didn't want space ships improved a lot—it might widen his business, but improvements cost money, and his exorbitant profits on Martian Mota Crystal and antiques, and Venusian medicinal herbs would fall with the increased supply.

So Avery and Spud defied the law. They set up their test station out there on the Silver Pall, a short-period comet that had established itself in the Solar System the year before—that is, in 2152.

Spud came back to Earth alone for supplies, and that's where they got him. The plague had broken out in America, a highly contagious glandular disease that was fatal in five days.

Since its point of origin was near the Columbia Space Port in Illinois, it was easy to conclude that it had come from another world. There had been other plagues from Mars and Venus.

You see how it all wound up. Spud had violated the Experiment Code, which was meant to guard against just such dangers. So Lorson and his lawyer pinned the blame for this new disease on him. And they got away with it. The Silver Pall Horror. Ten thousand deaths, before the plague was checked. Ninety-nine years in Alcatraz was too good for a guy like that, everyone said.

Yeah, only certain testimony was neglected in court. Spud had observed all the sanitary rules before landing—cleansing his ship inside and out with a two per cent blast ray. And he didn't catch the plague himself. Moreover, a few cases of the disease had existed *before* he had brought his ship down, a reliable physician told me. But he died suddenly. Maybe from the plague, maybe not. And other people wouldn't talk.

I saw Spud the night before they carted him out there to that sullen island off the California coast. Spud's not big, like me. He's only five feet six, but he's built like a bobcat. Sitting in his cell in his undershirt, he didn't look as depressed as you'd think—only tense and grim. And it was all topped off by a kind of jaunty, cynical grin. But there was a secret back of it. He was just twenty-three, then.

THE jail guard was a nice chap. He had wandered off discreetly down the corridor. And secret listening-phones are forbidden by law. So Spud said to me in a low, conversational tone:

"You quit your rocket engineer's job with Lorson, eh, Buck? Good! They would have tried to bounce you because I happen to be your brother. But you just told them that you were leaving, and didn't get mad, huh? That was good, Buck. But don't ever think it's over yet. Avery's still out there on the Silver Pall comet, and he'll go on testing meteor armor. And me—well, I figured I'd have had luck some-

time, so I was kind of prepared before I got hooked."

Spud paused then, and I knew some of the tension and determination under his grin, even though I couldn't see it. He continued to fuss with his right biceps, pinching it significantly with calloused fingers.

The skin of his upper arm was all peppered with little scars, like those of antique buckshot. Fragments of an unusually slow meteor, ricocheting repeatedly inside a punctured ship of the void, had made them. Some of those fragments were still imbedded in the muscles.

"I'm not fighting against the law, Buck," Spud continued, his eyes shining strangely. "I'm fighting *for* law, and against those that misuse it. You know that. And sometimes the means may have to be a little rough, when things get desperate. So, you see, when they put me in stir, they'll examine me carefully for weapons. They'll X-ray my body, and their plates will show the meteor particles in my arm. I'll tell them what they are, naturally, and how I got them. And most likely they won't look further.

"They won't know that before I even left the Silver Pall. I gashed my arm and put three little globes just under the skin, and let the wound heal over them. They'll think those globes are meteor particles too, not capsules of the new uranium tetramekalate. I'll be a model prisoner, Buck. And I'll wait a long time."

Uranium tetramekalate! Even professional criminals hadn't used it yet! It was so strange, hearing Spud talk so quietly like that, like a crook, planning. My heart started to pound wildly.

But I knew what was driving him. It wasn't just his unfair imprisonment. Not just an inventor's dream interrupted. Not just buddies that had died with meteors ripping through them, or strangled in riddled space craft that no one yet had been able to armor effectively against bits of cosmic debris that travel at anywhere from three to thirty miles a second.

The latter, of course, was the basic problem. Space craft that leave the

Earth have to be light. They can't carry massive armor.

But it wasn't just all this. Frank Avery was marooned out there on the Silver Pall comet now. Spud had taken their only ship back to Earth. And that wasn't all. The comet was going away from the Sun now. It had passed into the region close to the Belt of Asteroids, where meteors were so thick that no space ship or pilot could ever hope to win through and survive. And the comet was swinging on out toward the orbit of Jupiter, beyond the range of all craft that now traveled the void.

And slender, sunny-haired Edna Avery was marooned on the Silver Pall with her father. Spud hadn't spoken one word about her, but the haggard strain was in his eyes. The Silver Pall was a short-period comet, only a little more than five years. Five years! The comet wouldn't come back within range of Earth for half a decade. And even then, as now, the Averys would be refugees, breakers of the Experiment Code.

SO I said good-by to Spud that night, when they put him on the Chicago-Pacific Tube. In just a half hour that sleek, projectilelike coach would have spanned two-thirds of a continent. The brace of plainclothes men to whom Spud was handcuffed were good-hearted mugs. We all joked, but I knew I'd remember what Spud had told me.

I got various engineering jobs, outside of the field of interplanetary traffic, and I took a house in the country. My flying license was revoked on the pretext of my physical condition, but it was just a bluff. I was as sound as a rock. More of Lorson's work.

Still, I kept my little scout rocket, the *Martia*. It was a hobby with me keeping her polished, fueled, and ready. I knew things would begin to happen in five years, when the Silver Pall came back over the Asteroid Belt. . . .

However, it turned out to be a stunning surprise. In the first place, it was after midnight, and I was in bed and asleep. Someone grabbed my arm

and jerked hard. It was plain house-breaking, since all the doors and windows were locked.

I woke up with a grunt, ready and primed to go for my blast-pistol. The lights had been turned on in the room. And there was Spud, standing over me! With Alcatraz in the background of my thoughts, it was like being scared by a ghost, or the apparition of a demon.

Yeah, a demon. Because that's what Spud looked like. He was panting and almost worn out. Most of that bristly blond hair was singed off his head. His face was burned and blackened and covered with blisters. His prison tunic was all soggy with sweat and blood. And his raw skin was showing through holes charred in it.

Under one arm, he held the limp form of a man considerably bigger than himself. I recognized the bald head that kind of dangled from a scrawny neck, and the long, white arms and legs that protruded ludicrously from frayed and muddy silk pajamas.

The big, blue lump on the narrow, wolfish jaw must have represented the accumulated fury of many wrongs, and of five years of thinking. Spud had hit, and hit hard. Yes, the man was Nicolas Lorson. He had evidently been visited in the middle of the night, and "persuaded" to come on his present adventure, without even being permitted the formality of changing clothes for the occasion.

A shadow of Spud's old jaunty grin flashed through the dirt and blisters.

"Okay," he said. "We're here."

CHAPTER II

The Search Begins

THEN he gave me a moment to figure things out for myself. I knew many space veterans who would have cheered the spectacle of Nicolas Lorson's present plight until they were hoarse. But the situation was far more grim than funny. This was prison-break, assault and kidnap. And

the future was a black question-mark.

I didn't have to ask to grasp the chain of events that had brought about the tableau I now beheld. Some time tonight, red and white fire must have spurted in Alcatraz, the gray old prison meant for real criminals, and not men like Spud.

I knew without asking how Spud made his break. Uranium tetramekalate, the new rocket fuel developed by Fred Vandon, a scientist that Lorson had broken ruthlessly. The stuff is about as healthy to monkey with as the insides of a star, for when the fuel gets going, it breaks down into atomic energy.

Spud had dug out those little spheres he had buried in his arm. Tiny bombs, but devilish with heat and power. He must have blasted down part of the walls. Then no one, surely, had tried to stop him. It had been easy for him to win his way out, on a slender thread of bluff alone. None of the guards knew that he would not have exploded that last capsule, that killing and injuring those who only did their duty was not his way. They had let him pass through the walls, and to a boat that must have taken him to the mainland. Then he had stolen a rocket plane, got hold of Lorson somehow, and come here.

Law against law—for law. A strange paradox. It scared me now. Real science and humanity against a cheap tyrant's cruelties and obstructions to progress. There was no room to quibble.

I grinned at Spud.

"The Silver Pall's our next stop, eh?" I said.

He nodded tiredly.

"And Lorson, here, goes along with us," he added. "I think he'll be useful, Buck."

I got some clothes for Spud and Lorson. Then I dressed hurriedly, longing for the smell of the inside of a space suit. In another five minutes I'd have one on again. There were several aboard the *Martia*. It is best to wear them as much as possible when you're out in space. For if a meteor large enough punctures your ship, and lets the air out—

We carried Lorson to the hangar

and into the *Martia's* slender hull. Quickly we got his inert form into a suit, and fixed ourselves up similarly. Then we strapped ourselves prone, Lorson lashed between us.

Spud pressed the starting arm, and as though the fires of Hell broke all around us, the *Martia* shot into the unknown, screaming like a banshee. . . .

When we were three hours out from Earth, and still accelerating, Nicolas Lorson finally woke up from the kayo Spud had given him. Why he chose this particular time to regain his senses, I don't know, because both Spud and I were close to passing out completely. It must have been sheer fright that brought Lorson around—a physiological reaction to the stimulus of, to him, terrible danger. Call it self-preservation if you will.

I knew the story. Nicolas Lorson, master of the Lorson Ether and Interplanetary Projects, had never been in space before! And he was mortally afraid.

He lay there between Spud and me, held down by his safety straps. Now he gave a little wavering moan. I turned my head to look at him, my own vision blurred and darkened. I've seen rookies' reactions to their first ether flight, and it's sickening. It isn't just drooling lips and pasty faces and eyes that are half mad. It's something hideous that you can't quite grasp at or pin down—like seeing a human soul suddenly waking up and finding itself inhabiting a horrible, alien form.

LORSON gave me one awful, startled look. His face, inside his lightweight, transparent oxygen helmet, was blank with something more than terror. Then he began to writhe in his lashings like a trapped snake. His back, in his light, metal-and-rubber fabric armor, humped spiderishly. I heard the straps creak, even above the din of the *Martia's* rockets. His muscles were going beyond themselves, as his eyes took in the gleaming instruments of the space ship, telling him where he was.

Nicolas Lorson, who had made pawns of thousands of other human lives in

space, was the worst rookie I had ever seen. He squirmed, he retched, he laughed hideously. The opened face plate of his helmet clapped and rattled on its hinge, like a ghastly accompaniment to his evidences of mad terror.

I was afraid his straining muscles would dislocate a joint. That happens sometimes. I was even afraid he might break the stout web safety straps we had put around him. If he did the latter and tried to stand up, the way the *Martia* was accelerating he would break his neck, or die from an overstrained heart.

I leaned over toward him and freed an arm from my own lashings. I was going to remove his helmet and bop him one on the jaw to put him to sleep again. But Spud shouted from his opened face plate, telling me to stop. "Don't do that yet, Buck," he said, panting with the strain on his own heart and lungs. "Let Lorson take it for awhile. Maybe it'll do him some good. Maybe it'll bring him around—make a man of him."

I could see what Spud meant, all right. Once in awhile space can change character. Out of hell-fire and distance and bizarre beauty, a new person can be born—sometimes. If that happened to Lorson, a lot of problems would be solved. But I'm not an idealistic optimist like Spud. I knew that it was hopeless to try to rebuild Nicolas Lorson. And I sensed, too, that Spud was just asking for trouble by hoping.

But I didn't swing at Lorson's chin, then. I wanted to give him a chance, too, even if there was no good in it. I had a fair idea of what was passing through his mind, in all his terror and confusion.

Now he was seeing what space ships are like—just fragile shells, made as light and strong as possible for a given weight. Just shells, everything sort of pared out in their structure to decrease mass, and yet, by careful mathematical calculation, braced in such a way as to give the greatest strength, gram for gram.

Space ships had to be like that, for though the active part of the fuel carried was uranium tetrametalate, re-

placing older atomically unstable substances, it couldn't be used as a pure fuel by any means.

It was too violent, and though it was cheap to produce by the new transmutation processes, it had to be highly diluted with baser substances, for, in addition, it didn't have near enough mass to provide the proper rocket-thrust. So this was an added load for a space ship, fighting the gravity of a large planet, to carry.

Lorson wasn't reasoning it all out, of course. You don't reason out things like that, not when you're accelerating into space for the first time, anyway. You just feel it. All the mathematical formulae you've ever known just hangs in the background then, like a lot of little imps, sneering and snickering at you, and making you crazy.

"Don't! Don't!" Lorson screamed. "Take me back! I can't stand it . . . Please! I'm scared!"

IT was pitiful and contemptible, Lorson's wild raving. But I thought then that he might be seeing for the first time what scientific problems we were fighting, and against what opposition. Then I thought of Avery and his daughter Edna, out there alone on the Silver Pall for so long. Maybe they were still alive, maybe dead, maybe insane. No one knew.

As I had realized before, it was foolish to hope for a change in Lorson. For half a minute he pleaded, then he took to mockery, and to threats and promises of destruction.

"Think you're smart, eh?" he raved. "Well, I've fooled you before, and I'll fool you again! Prison for one of you, that was nothing! Sure it was crooked! Why not? That's the way to get ahead in the world. You poor idiots! By now a police ship is following you. You think I'll be your shield, eh? That the police won't fire because I'm aboard?"

"Well, what of it? They'll keep following and following, until they track you down. Better take good care of me, you dirty kidnapers, because if I happened to die— Well maybe someday I'll tell you where the Silver Pall plague really came from.

"You poor, stupid, childish dupes!"

I gasped, startled, at Lorson's half-admission of guilt. In my sudden cold surprise and anger, I think I would have leaned over and tried to hammer a complete confession out of him. But then fate intervened. We were already out of the region, in the immediate vicinity of Earth, where patrol rockets keep most of the meteors destroyed.

I can't describe what happens and what you feel when a meteor strikes, though I've been around often when they've hit, and though it is all very vivid in my mind. It happens before you know it, and then you think back—if you're still alive. Five to thirty miles a second is terribly fast, when you're dealing with only a few yards distance.

You remember a streak of blue-white heat, produced by the friction of impact. It's almost too swift for your eyes to catch.

There were four meteors on this particular occasion and they came close together, like old-fashioned machine-gun slugs. They couldn't have been any bigger than small marbles, which was lucky for us. But they went right straight through the *Martia*. None of us was touched, and as it developed, there wasn't any danger.

You see, there is one simple safety device that can take care of these little fellows, though it's no good at all with anything a few inches in diameter. But it helps a lot. Frank Avery developed it, and then had to sell it to Lorson's outfit for a pittance, considering what it was really worth.

The *Martia* was equipped with this invention, too. Its hull was double-walled. Between the walls was a quick-hardening, tarry substance squeezed by compressed air. It closes the holes quickly, before more than a few puffs of atmosphere can get out, and hardens.

So we could breathe again, Spud and I. Lorson didn't have any wind in his lungs to scream with. And he couldn't seem to move, either. He just stared at the place in the curved steel wall where one of the meteors had exited. There was a hole in the steel, as neatly punched as anything

you've ever seen. And there were little marks around it, where splinters of the meteor had sort of splattered. It was planetary velocity, applied to a plate of metal, man-made.

"I hope you like the looks of that hole," Spud told Lorson ironically.

But Nicolas Lorson's gaunt, powerful frame had stiffened and then gone limp. He had fainted.

CHAPTER III

The Silver Pall

SOME minutes later, I shut off our rockets. A space ship can never go any faster than the speed of its blasts, and we had reached that speed. To keep the rockets going would only have wasted fuel.

Far astern we had sighted a pursuing craft—a little silvery sliver in the spatial sunshine. It was a police boat. They must have already identified us through their telescope, our number plate and all.

It had been easy to connect Spud's escape with Lorson's abduction. And it had been easy to put me, Spud's brother, under suspicion, and hence the *Martia* too, which was numbered CV4931.

I switched on the radio, knowing beforehand what would come out of it. "Stop, *Martia*!" came the order. "Stop in the name of the law."

Spud winced, and for a moment I almost hated myself. Then I remembered. Avery was out there with Edna and all we were fighting for.

I set the radio for transmission.

"Cannot stop," I said into the microphone. "Nicolas Lorson, of Lorson Ether and Interplanetary Projects, on board. Do not fire but follow us."

Lorson was a good shield, for no shells came over the miles of distance, bursting in our stern, tearing us apart, putting an inglorious end to our troubles, and stamping us forever as criminals.

The *Martia* was as fast as anything in the spaceways, so long as it was undamaged. The police boat, swift though it was, couldn't get any nearer.

And that was something in our favor.

So our flight toward the Silver Pall comet, and toward a black question mark of unsolved mysteries and hopes and fears, settled down to a steady grind. Hours, days, weeks.

Lorson was always troublesome, though in the main we tried to treat him kindly. He denied all knowledge of the cause of the Silver Pall plague now, refuting the hint he had made in his first spatial mania, that he knew its real origin. I tried to bulldoze the truth out of him at first, but when he had whimpered and pleaded, Spud had told me to stop. It seemed a little illogical that he should know the ancestry of so mysterious a disease, anyway, when even famous physicians were puzzled.

Still, there was always a light of hidden knowledge in his eyes when he made his denials. At least I suspected as much, and later it turned out I was right.

We didn't know what tricks Lorson might try to pull and had to watch him constantly. Several times during the course of journey other small meteors struck the *Martia*, and Lorson was horribly frightened. On other occasions he would curse us for hours. He was like a supremely crafty child that you could never trust.

Within three weeks we crossed the orbit of Mars and shot on, nearing the ominous Silver Pall comet. It was ugly and beautiful at the same time—a great swirling bulk of cosmic dust and debris, and intensely rarified gas.

It chilled me a little, watching it there in the feeble sunshine, all silvery with fine dust, part of which, Spud told me, was calcium and barium sulphide. Somewhere beneath that magnificent, rolling fearsome curtain was either victory or defeat. Reunion, or perhaps the silence of death. We didn't know.

Spud's face was strained as he guided the *Martia* nearer to the comet. There was just one way to get into the heart of that swirling, stubby-tailed monster, and that was through a sort of vortexlike throat, for the comet spun on its axis like a planet. That is, all of the solid parts of it, for the

gaseous tail remained fixed, away from the Sun.

Down and down through that vortex-throat, which corresponded to a pole of the Earth, the *Martia* dropped. It grew dusky and dark beyond the ports of the ship, as the depth of ever-agitated meteoric dust and fragments above us thickened. It was ticklish business, getting through, but Spud was skillful and he knew the way.

CENTRIFUGAL force kept the whirling vortex-path fairly clear, but now and then cosmic wreckage rattled dangerously against our ship's hull. They were meteors, really, yet in their circular, orbital motion, they could attain only a tiny fraction of the velocity of meteors in free space. Had they gone faster than they did, centrifugal force would have catapulted them off into the open void.

The feeble gravity of the Silver Pall, augmented a little by the attraction of some of its terrifically heavy central particles, would have been too weak to chain them, had their velocity been greater.

There was danger in that journey down. These meteors were moving only with bullet speed this time, not cosmic speed. But you can't disregard even such minor rates of motion.

At last Spud landed the *Martia* on a great, meteoric lump a quarter of a mile in average diameter, which coursed round and round swiftly but regularly at the outer fringe of the Silver Pall's core. The landing, too, was a ticklish job. But Spud accomplished it without a hitch.

We had arrived, at least. The police ship that had followed us from Earth wouldn't bother us for awhile, anyway, for they had been some distance behind us, and before they could actually invade the Silver Pall they would have to find that deceptive dimple in the mist of dust. And that wasn't easy.

Dressed in space armor, and shod with magnetic boots that would hold us by their attraction to the nickel-iron alloy of the huge, rugged mass on which we had landed, Spud and I went forth from the *Martia* to make our fateful exploration. We took Lorson

with us, since we did not know how else to trust him. His wrist was secured to mine by means of stout cord, since we didn't have a pair of handcuffs.

Hunching low, we crept over that rough, rusty surface, which was marked with many queer, meteoric upjuttings. In the eerie gray light that sifted down from above, our adventure was like invading the lair of some demon of legend.

There was no visible life, though Doctor Frank Avery had found microscopic bacteria growing inside porous rock outcroppings, where a little moisture and oxygen existed, sealed up. And his discovery had been used against him, and Spud, his co-worker. For some obscure variety of these bacteria was supposed to be the germ of the Silver Plague.

We got to the Avery encampment at last. It was in a hollow, near one of the pointed ends of our meteor bulk. Looking down the steep slant, we could see part of the deeper core of the comet. Huger, vastly heavier lumps, rotating steadily, too, around a common center of gravity. But we did not look at them long. . . .

Nothing could have been more desolate and eerie than that camp. Nothing more expressive of defeat and failure and desertion. My heart sank, it seemed, into my heavy boots. No explorer's encampment left desolate for a hundred years on the wastes of Mars, or in a valley of the Moon, could have been more weird and depressing.

"God!" I heard Spud gasp, through the communicator-phone.

I knew how he felt, standing there in the empty silence. There was the sealed entrance to the living quarters, dug cavernlike into the mass of the meteor. There was the test-catapult, and other paraphernalia with which Avery, Spud, and Edna had been working. There was their furnace, for preparing super-hardened alloys. There, in neat rows, were Avery's foot-long samples of meteor armor, the metal of them blurred now with a fine sifting of dust from above.

Each sample was neatly and lightly prepared. The principle of each was the same, only the forms were differ-

ent. The armor had double walls, and between, slanting or curved blades. Meteors were expected to puncture the outer shell, but on coming into contact with the slanted surfaces within, it was hoped that they would glance off. It was the principle of the inclined plane.

AVERY had attached each of those samples to the end of a cylinder, which fitted inside the barrel of his catapultlike projectile—the catapult was a super-speed gun, really. The scientist had fired the samples upward at all the terrific velocity that the super-gun of his possessed against the ceiling of swarming meteors above.

They were slow meteors, it was true, and they were of little danger to us here, for the larger mass on which we stood was moving in the same direction, and at about the same speed. But they had served their purpose in Avery's tests. It was the catapult that had imparted the necessary velocity to the samples themselves, duplicating the conditions of the impact of swift meteors with a space ship in flight.

Each armor sample bore the marks of the experiments. Avery had recovered them by means of a cable that the projectile mounting had shot out behind it, after repeated collisions had stopped their flight.

Each sample was riddled, being effective in a minor way. The slanted surfaces, offering an opportunity for a missile to glance rather than to penetrate, was of some slight good, but not enough. With those ever-pressing weight limitations of space ships, those super-tough alloys could not be made thick enough. And so a good, simple idea had failed.

And somewhere, during their years of solitary toil here, Frank Avery and his daughter Edna had stopped their heroic work. Why? The silence around us was too grim for us to be optimistic. I saw Spud's body seem to sag. All his spirit seemed to have evaporated.

Then Nicolas Lorson had to add his thoughts. He was leering sadistically, and his voice rustled mockingly in my communicators.

"The end of the trail, you two imbeciles!" he chuckled. "Nothing left to do but give yourselves up to the police. Edna and Frank Avery are dead!"

I saw Spud's eyes, then, as he turned toward Lorson. For an instant I thought my brother would commit murder. But he controlled himself.

I wasn't that good. My own blood was boiling hot, and I was ready to commit mayhem. But I didn't because I thought of something else. All of a sudden I got crafty, as I figured I should have been long ago.

I just grinned at Lorson, who was still tied to my wrist.

"Never mind, fella," I said. "Never mind talking about what the police will do to us." And then I fibbed openly: "The space jitters gave you a bad habit, Lorson. They made you talk in your sleep. And sometimes, even when you were awake, you talked too much. Your history's blacker than I thought, Lorson. And I kept the microphone of our ship radio open at all times during the trip. Your voice is pretty well known, fella, and our transmitter was going all the time, too. That means that on the police boat they probably heard you and everything you said."

Lorson's eyelids flickered, and his face went white. Through the cord connecting our wrists, I could feel him trembling. He wasn't just mixed up in the riddle of the so-called Silver Pall plague. There were a lot of other shady dealings, of course. And now Lorson was scared the police might know.

However, there wasn't any time for me to enjoy Lorson's discomfort. I grabbed my brother's shoulder.

"Come on, Spud," I said. "Brace up. We haven't found anything really bad yet. Let's get into the living quarters."

We did that, working the bolts of the double-doored airlock, which led down into the substance of the great meteor-mass. The little cavernlike room below was deathly still. It was a living room and kitchen, which contained an electric stove, table, cupboards and a few books. Everything was in perfect order. The two bedrooms were the same.

In Edna's room, beside the picture of Spud, a piece of paper was propped up, bearing a kind of crude cartoon, scrawled in pencil.

IT depicted a space craft trying to come to rest on an Earth that was—well, humanized. It had a frowning face, big ugly eyes, and a long, satanic nose. Above the picture was the caption:

Space Ships Don't Land!

It all looked screwy to me, but Spud suddenly brightened.

"Edna drew this," he said. "It's her hand, all right. But what's the idea? What was she trying to get across? Some kind of a message that wouldn't be clear to an outsider?"

Then Spud turned and faced me, his eyes shining.

"I don't get this picture business yet, Buck," he said. "But I bet I can tell you part of what happened. They ran completely out of food supplies, and low on air-purifying chemicals. So they resorted to suspended animation! Edward Clay's new dormaline will induce it, though it's pretty dangerous to use. And Frank had some of the stuff here for a last resort."

"They were hoping to culture the basic food substances here, chemically, and produce oxygen as a by-product of the process, too, in case I didn't bring back supplies in time. The idea's from worrying too much. But somehow they didn't use it. So my guess is that they're asleep, in a state of suspended animation. They're probably in the storeroom across the corridor, since the door is sealed, welded, I think, from the inside."

Spud and I didn't waste any time. I had almost forgotten that Lorson was with us, even though he was tied to me. We attacked that storeroom door with our blast pistols, the heat rays and X-rays focused down to thin, concentrated cutting points of energy. The steel was tough, though, and we used up a lot of power. The job of opening that door wasn't quite finished before our pistols began to sputter, the energy cones just about burnt out.

Then Nicolas Lorson sprang his trick. My attention had been almost completely diverted from him, when suddenly he swung his arm, and my arm with it. The short cord holding our wrists together came for just a fraction of an instant under the rays of Spud's pistol. The cellulose fiber glowed red, and parted easily from a swift jerk of Lorson's arm. He was free of me now, and wheeling like a cat, he dashed around the angle of the corridor.

Before Spud and I could get to him, he was inside the airlock. He passed its outer valve, and contrived to prop a bar of steel firmly against it, before we could stop him.

It took us ten minutes to loosen that propped bar enough, so that we could escape. And by then Nicolas Lorson was well out of sight. Angry, we scrambled our way over the rough meteoric terrain, toward the *Martia*, feeling that whatever diabolic scheme he had conceived would include the ship.

When we arrived beside the little craft, we saw Lorson's tracks in the dust, beneath one of the portholes. He had gotten into the *Martia* by means of the porthole, the airlock having been fastened by a key in my possession. Evidently sometime during our voyage, he had managed secretly to loosen the inner fastenings of the port, so that when the external ones were easily removed it would open readily.

It was useless to try to unfasten the airlock bolts with the key, for I knew that the door would be barred from the inside. Spud and I were locked out of the *Martia*. Our blast pistols were depleted to the point of being all but useless. We had no food or water, and our small air purifiers would not hold out long. Around us was a bleakness unimaginable, and the thin, cold, oxygenless gas of a comet's core.

We managed to keep our heads, even though I felt more like screaming. Spud had begun to fuss with the tuning dial of the communicator at his belt, and I did the same with mine. In this manner we picked up waves coming from the radio transmitter of

the *Martia*. Lorson was talking to the police craft, which was hidden somewhere beyond the screen of dust extending far above. We listened.

"I've escaped from the notorious MacCauley brothers, Commander," he was saying in clipped, artificial tones. "I've locked myself in their ship, and they can't reach me here. They are almost disarmed and harmless. Descend through the rift in the meteors, and capture them!"

CHAPTER IV

The Secret of the Aveyrs

NEXT, Spud and I heard the commander of the police craft responding, though there was a certain reserve in his voice.

"Very well, Mr. Lorson," he said. "We shall be there within an hour."

That looked like the end of Spud and me, all right. Lorson was safe in the *Martia's* steel hull, where we could never get at him now. He was going to win out, after all our efforts. And, ironically he'd be a sort of hero, too!

We started back for the Aveyr encampment, since there was still a mystery to solve there, and no good to be gained by hanging around the *Martia*. But before we reached the camp, we picked up Lorson's voice again in our phones. He was talking to us this time, using a small communicator radio like our own—one that wasn't strong enough to get its waves through the static interference of that swarm of dust overhead. He didn't want the police to listen in.

"Don't worry, boys," he crooned, and I could almost see his sadistic leer. "I won't let the police get you. I've got other plans in mind. I'm going to allow you to suffocate out there. It's a nice, slow death. You'll have plenty of time to contemplate your past, and perhaps go insane. And then your bodies will freeze solid in the cold silence. . . ."

Lorson's descriptive powers seemed very good indeed. I had a suspicion of what he meant to do, but I could do nothing—yet.

We continued back to the Avery camp, entered the living quarters again, and pounded at the storeroom door that we had been trying to cut open with our blast pistols. After incessant pounding with some heavy steel bars, the door finally opened ponderously.

In the storeroom there was a big, complicated retort apparatus, and two long metal boxes, side by side. We had no trouble opening the latter. Each contained a body!

Frank and Edna Avery were sleeping or dead, depending on how the suspended animation trick had worked. The kind old face of Doctor Avery was composed and peaceful beneath his shock of white hair. And the girl was beautiful. The lids were gently down over her blue eyes, and there seemed to be a little, enigmatic smile on her lips.

I didn't blame Spud for the anguished, half-tender grimness of his face then, as he looked at the girl. I knew that he loved brave Edna Avery. Certainly no one could have blamed him for that.

We had cut the power of our communicators so low that even Lorson couldn't listen in on us now, but we could still communicate with each other.

"There's still a rosy color in her cheeks," I heard Spud say. "That means we could revive her, if we had heart stimulants, and heat packs. We could get the stuff on the *Martia*, only there's Lorson. And we're outside."

Spud's lips curved bitterly. All the devil-fighting energy seemed to have drained out of him.

IN Edna's shapely hand I suddenly saw a folded piece of paper. Gently Spud disengaged it from her fingers, and spread it wide. We read what was written there together, for it was addressed to me, too.

Dear Spud and Buck:

There has been no news from Earth, and we do not know what has happened to you, Spud. But we hope that it will be either one of you, if not both, that first reads this letter. For we have solved the meteor problem! Our solution must be given to the world, because it will save many lives, and improve

the entire science of space travel greatly.

Dad became ill, and I had to take care of him. That was why we could not construct an apparatus to produce synthetic food, and to replenish our oxygen supply. There was no time. Long before, we had given up the armor idea, and our new work was far advanced. We've managed to complete the latter. We could go back to Earth, if there was air and food to last through the trip, as I'll explain soon. But there is no food and very little air. So we have resorted to suspended animation.

Space ships don't land, is a true statement. I meant that for somebody who knows enough about it to guess that there is something interesting behind that claim. Space ships—the real ones that cover great distances between planets—don't land, or shouldn't, anyway.

It's very simple. When a space ship takes off from a planet as big as Earth, tremendous energy is required to overcome the strong gravity. That's why our present day ships have to be made so light and fragile, so they can take off from planets and carry enough fuel, and a pay-load besides.

If they stayed in space permanently, there would be no such problem! Weight would no longer be a problem, and really adequate armor could be carried against those deadly meteors!

It's true, Spud and Buck. I don't think you know it yet, and it will seem silly to you at first, I suppose, but the big hunk of stone and iron and nickel you're standing on now is a crude, *working* model of the space ship of the future!

Think it over, if you don't believe me right away. It is terrifically thick, almost solid. No meteor, except one comparable in size to itself, could ever harm it! And we've given it motive power, Dad and I. We blasted a long tunnel deep into one end of it, and we filled the tunnel with dust and iron chips mixed with a small quantity of uranium tetrametalate. Our retort apparatus for making the explosive is here in this room.

The first Avery ship is ready to fly. It's tremendously heavy, of course, but here in the Silver Pall there is so little gravity for it to overcome that this doesn't matter. It's too crudely made to be easy to navigate, but we've arranged small side tunnels, which work like lateral guide rockets. And if it's timed properly in the first place, for proper direction, it will fly toward Earth. But it will not try to land on Earth, certainly.

Instead it will establish itself in an orbit around Earth, like a little moon, and far enough distant to be out of range of most of the terrestrial gravity. Then your small space ship will act as a tender.

I suppose you're way ahead of me by now. The tender would land passengers and freight, and would bring back more freight and passengers. For the short hop, its fuel load would not have to be so heavy, and it would fly in the local space area, kept clear of meteors by the patrol boats.

I guess this is about the complete picture.

Dad says to get your timing and calculations by the space charts, as usual. Then start the big tunnel—the main rocket tube—going. A concentrated burst from a blast pistol, directed into the dust and iron chips at the tunnel mouth, will excite the uranium tetramekalate, and there'll be time enough to get out of the way.

There is not much else to tell. Dad and I are about to inject dormaline into our arms now. I love you terribly, Spud, and somehow, I think I'll see you again. This is all so very much bigger than ourselves.

May all our hopes come true, Spud and Buck MacCauley.

Edna Avery.

THIS is Edna Avery's letter, word for word. It's famous now. As we read it that first time, I don't think Spud and I moved. But pretty soon I was seeing gigantic vessels of the void, built in space itself, probably of refined meteor-metals. Huge argosies with palatial passenger quarters, and enormous freight carrying capacities. And they wouldn't be just crude lumps of cosmic flotsam, like this father of them all. Their propelling and steering mechanisms would be refined and perfect. But they would be secure from the menace of meteors.

"Dammit!" I burst out suddenly, thrilled with the dream, in spite of everything. "Dammit, Spud. It's simple as hell, but it'll work—really work! Big ships, with tremendously thick walls, always staying in space. And little tenders, to form the contact with planets."

"Sure it'll work," Spud returned in a low tone. "Only don't forget Lorson, and that we're locked out of the *Martia*. Also that legally we're in a jam, and that the police boat is coming. Not to mention that Lorson said he was going to see that we suffocated. Furthermore we haven't got a blast pistol with enough power in it to excite the iron and dust and uranium tetramekalate mixture in that tunnel."

Spud had picked up a pistol which lay on a work-bench nearby. It was the one which Frank and Edna had used to weld the door of their tomb. But the weapon was empty.

"We might be able to scrape a residue of uranium tetramekalate out of the retort apparatus there," Spud continued. "Only it wouldn't do us any

good. We couldn't attack the *Martia* with it and try to blow Lorson up, because we haven't any detonator caps, or anything to take their place. Unless we can find something here."

Spud and I searched feverishly throughout the living quarters, but it proved to be a futile quest.

Close to panic, we started back for our ship. Lorson, peering through the ports, evidently spotted us from some distance off. He started to talk to us again now, his tone a low, half-scared hiss in our phones.

"That's it, you two fools," he rasped. "Come in close! You're going to see a show! You're going to see how I dispose of people who might not be trustworthy. Maybe you lied when you said that that microphone, and the large radio transmitter here on the *Martia*, were in action throughout the trip, and that the police may have heard me—betray myself. I don't know. But I'm not going to take any chances.

"During the next few minutes, you'll see. And if you've found anything interesting there at the Avery camp, I'll take care of it after you both are dead. Think I can't fly the *Martia*, eh? Well, I'll get it up into space somehow, and I'll get it headed back toward Earth. Then I'll call for someone to come pick me up in space. Just you watch!"

Spud and I caught on at once. Somehow Lorson was going to try to destroy the police boat that was still somewhere up there above the dust and meteor screen. There was no use arguing against his insanity, no use telling him that I had lied, for he would think that it was just another bluff. And there was a chance that he would be able to fly the *Martia*, just as he had said.

THEN Lorson hurled another taunt into our faces—a taunt and a revelation.

"Oh, I almost forgot!" he chuckled evilly. "The Silver Pall plague. I might as well tell you now where it came from, because you'll never be able to repeat the story. It was a mutation of ordinary cold virus, created on Earth itself, close to my Co-

lumbia Space Port. But it was an accident.

"As you know, the radio-active radiations from exploding rocket fuel can have strange effects on life, warping the chromosomes of heredity. That's what happened, even to the invisible life of the cold virus. It changed a little, and produced the plague. My fault, and my responsibility. The interference wave-screen around the space port was defective. But you took the rap for me, Spud MacCauley!"

Lorson's tone was loaded with sugary mockery as he spoke to us through his small belt-transmitter that could reach only us, not the police boat above that he said was doomed. That might bring quick vengeance, were its occupants to find out.

Spud didn't seem to get angry. I think he was a little confused by all that had happened, as I was. He drew me into the protection of an upjutting mass of rusty meteoric iron, within sight of the *Martia*. We waited there to see what would happen.

We didn't have to wait long. We tuned our receivers to pick up waves from the *Martia's* powerful static-penetrating transmitter, and heard Lorson speaking again to the commander of the police boat.

"I will guide you down the passage through the dust and meteor swarms, Commander," he was saying in a conversational tone. "It is really quite easy, if you follow my instructions. But you must be ready to execute instantly any sudden order I may give you."

It didn't require much thinking for us to figure out how Lorson meant to get rid of that police boat. One look upward at the inner mouth of that vortexlike passage through the whirling dust and meteors was enough to tell us.

Lorson would give a "sudden order" that would throw the police craft against the wall of the vortex. The meteors were slow, traveling perhaps at less than a thousand feet per second, but that was swift enough, when mass and numbers were involved. The little ship would be completely smashed.

It was an easy trick, and a sure one. Lorson had been crafty enough to betray no suspicion in his voice. Thus he had guarded against his own semi-belief that they knew of his wrongs. From his own angle he had judged well, reasoning that if the police had learned of his misdeeds, they would still believe that he had no inkling of their knowledge.

So they would trust his word now, realizing that he must need their help, and could not endanger them. They would trust his technical judgment, too. He was scientifically clever and educated, even though he had never flown in space before.

Perfect psychology, and sure destruction. I gulped hard.

"What'll we do, Spud?" I demanded hoarsely. "Our communicators aren't strong enough for us to get even a whisper of warning through to that police commander."

Spud didn't heed my words at all. Our radios were still tuned to space ship wave length, and I had forgotten. But I saw that Spud's face was stony with strain and checkmated determination, as he stared upward like a trapped tiger.

I felt the same. The damnable irony of it all. We had the solution to the problem of meteors, and other immeasurable improvements to space flight. Edna Avery was back there, waiting to be awakened. And then Lorson slaughtering his way to victory. No doubt he would see that the Averys died permanently with us.

And then, if he so chose, he would steal the greatest Avery invention, or else keep it secret if he thought it would injure his business. It would be easy to hide his crimes out here. No one would ever know what happened to that police boat.

CHAPTER V

A New Era Is Born

HELPLESS we were waiting to witness wholesale murder, Spud and I. Far up that vortex-throat we saw the glow of breaking rockets.

The police boat was coming down now. The commander acknowledged Lorson's treacherous words.

"Descending, Mr. Lorson," he said. "Guide us."

Then Spud took his almost useless blast pistol from his side pouch. I thought it was just a gesture of wildness at first. He pressed the trigger, and the thing sputtered feebly. His finger worked, making dots and dashes of a message.

Sure it was crazy. No light that anybody could see could ever get through those miles of dust above, I was positive. The pistol wasn't even emitting any visible light here.

But wait! Upon the dust curtain above, there was a brilliant circular spot of luminescence, flickering out code in unison to Spud's movement of the blast pistol's trigger! My heart pounded with a tiny bit of optimism. Though the pistol's charge was almost burnt out, it was still delivering a beam of radiations consisting largely of X-rays—powerful X-rays by old time standards.

And in that dust up there, there was calcium and barium sulphide, which becomes fluorescent, giving off light under X-ray stimulation! From above that streaming curtain of dust, Spud's signals would be visible, too, as a flickering circle of light.

I was like a man in a dream as I read the flashes of Spud's message:

Lorson is treacherous . . . Be on guard . . . Keep your weapons ready . . . Trust your own judgment . . . He is trying to destroy you . . . Descend carefully by your own observations . . . This is Spud MacCauley . . . Lorson wants to smash you against the side of the vortex. . . .

Did they see the message? There should be observers posted at every port on that space boat. What would they think? Lorson was speaking to them by radio. And at the same time Spud MacCauley was speaking to them in another manner, telling them an opposite story. Spud MacCauley, by repute a notorious criminal. Whom would the police believe?

My breathing and heart action seemed to stop as I waited. The police boat was already quite a way down

the vortex-tunnel, though its form was blurred by the fire from its exhaust jets.

And I could still hear Nicolas Lorson talking to the commander. As yet, Lorson seemed quite unaware that Spud had signaled them. Perhaps he was too occupied with his own plans to notice the slight flickering beyond the ports of the *Martia*.

"Easy," he was saying. "Nothing to it, unless—"

And then he sprang his trick. His calm tone suddenly dissolved into a shout of almost hysterical excitement.

"Quick!" he yelled. "All the star-board tubes—full! Quick, Commander! Meteors!"

That was the moment when everything hung in the balance. A sudden, startling order, with every hair-trigger nervous reflex tending to obey. Everything seemed in Lorson's favor then. In another instant that police boat should be hurtling side-ward, to be chewed and battered beyond recognition by those spinning meteors of the vortex wall.

It was a moment without breath or heart beat. Spud's face was a mask of pleading. Then that moment was over. The police boat was coming steadily down, without a change of course!

Why? Because Spud's warning had taken away the element of surprise, I think. If Spud had been recognized as the blackest desperado, I believe it still would have worked. They were on guard, those cops, and took a second of time to think the order out. Now the commander depended on his own skill as a navigator.

Lorson was shouting with real hysterical fury now.

"Hurry up, you damn fool!" he screamed. "You'll all be killed!"

BUT it was too late now. The small, heavily armed craft continued its unruffled descent.

In my radiophones I heard blasting curses from Lorson. Then the waves went dead. For fifteen seconds more, the *Martia* continued to rest quietly there in the hollow. Then fire jetted dazzlingly from its rockets, and it ripped clear of the great meteor mass.

Sensing that the occupants of that police boat understood the treachery he had attempted against them, Lorson was trying to get away, driven by mad fear. If he had been cooler, he might have succeeded.

He managed to guide the *Martia* parallel to the rotation of the great rusty lumps that formed the nucleus of the Silver Pall. And the vortex-throat was clear now, for the police boat was out of it.

But Nicolas Lorson didn't make it. His maddened nerves weren't steady enough, and he came up at too long a slant. Sparks flew like lightning as the *Martia* struck the wall of the vortex, and crumpled like a battered bit of tinfoil, its fragments to be absorbed by the whirling holocaust. . . .

I looked at Spud then, and he was grinning. Funny, but the next moment we were shaking hands like a couple of dopes. . . .

And then? Well, we gave ourselves up to Commander Parsons, and were put under technical arrest.

"There isn't much doubt that your names will be cleared, boys," he told us, after we had given him our side of the story. "What Lorson told you about the cause of the Silver Pall plague is quite probable, and can be checked easily enough. As for Lorson, we've known for a long time that murder and theft were part of his methods. But he kept out of our reach, as far as evidence went, and we had to protect him. You've rendered society a service. . . . And now will you lead us to the Avery camp? We'll investigate the space ship idea of Frank Avery's immediately afterward. . . .

Heat and heart-stimulating drugs brought Edna Avery around easily

enough. After two hours in the tiny hospital cubby of the police craft, she was smiling weakly up at Spud, happy as anything. I didn't hang around to listen to what they said to each other. It was none of my business when they had so much to say.

Old Frank was gone, though. We hadn't told Edna that yet, of course. His sick old body hadn't been able to survive suspended animation. But he was a martyr. The idea kind of stuck in my throat.

Especially when, twenty hours after the landing of the police crate, we started flying that huge new meteor-ship back toward Earth. Crude she was, and unfinished. But she had a soul—a soul of safety and might. It would take a meteor indeed to hurt her, or to penetrate into the little cavern dwelling dug in her heart. And nestled into a hollow in her crust was the police craft, firmly lashed into place, and pretty well protected on all sides. We had food and air enough now, so everything was all right.

White flame, touched off by a blast pistol, jetted from her tunneled rocket tube, and she accelerated slowly but mightily straight through the texture of the Silver Pall comet, and took her baptism of starlight. It was magnificent.

We would have to improve her, build her over, dig more caverns in her and make them homelike, put her in service and give her a name. *The Avery*. A name that would go ringing down the ages. The first ship made never to land.

I forgot all about Nicolas Lorson, and the trouble he had caused. That didn't matter now. This was magnificence.

A BIOLOGICAL BARRAGE THAT TURNS THE
WORLD TOPSY-TURVY Baffles Men of Science

IN

SLAVES OF THE LIFE-RAY

A Complete Novelet by ALFRED BESTER

COMING NEXT ISSUE

Science Quiz?

HERE we go again—around the worlds in sixty questions! But if it should take you more than a light-year to speed through this month's crop of scientific stumpers, turn to Page 110 for the correct answers—if you're not up on your Who's Who and What's What in the realm of scientific discovery.

POSITIVE OR NEGATIVE

The following statements are either true or false. Many a true word is spoken in jest, so beware. (Par for this course—15 correct.)

1. We will never be able to see an atom, for a wave of light is about 5,000 times as long as the diameter of an atom of oxygen.
2. Up to a certain point, water gets heavier as it gets colder.
3. Radio waves differ sharply from electromagnetic waves.
4. The Kennelly-Heaviside Layer reflects radio waves and makes radio transmission possible.
5. An individual may become habituated to the use of any drug.
6. Element No. 87 was the last element discovered by scientists.
7. Natural lightning produces about 100,000,000 tons of fixed nitrogen annually over Earth's surface.
8. The death rate in the United States is steadily increasing.
9. Radio communication between North and South America is seldom interfered with even by the most severe magnetic storms.
10. Sounds in water are echoed in exactly the same way as in air.
11. Statistics indicate that color-blindness is about ten times more prevalent in women than in men.
12. All the planets, including the 1,500 asteroids, revolve around the sun in one direction.
13. The pore pattern of the human skin differs distinctly in each individual, as in the case of fingerprints.
14. It is a general though not invariable rule that fish spawn up-current so that their young are distributed down-current toward the grounds on which they live and grow.
15. Chemists are able to synthesize the extremely complicated chemical structures of the living cell.
16. Liquid helium has become relatively common, although there are not more than a half dozen laboratories in the world which can produce it in any quantity.
17. Most explosives as well as nearly all the combat gases were discovered in the course of experiments conducted for peaceful ends.
18. The principle employed in transmitting television pictures is similar to the technique used in motion pictures.
19. Goldfish grow significantly faster in water in which other goldfish have lived for a limited period than they do in other water.
20. Genes, the ultimate carriers of heredity, are easily visible to the naked eye.

TAKE A LETTER

Here are ten incomplete scientific facts. Several suggestions are offered in each case as possible fill-ins, but in each case only one is correct. So take a letter and see if you can win an A. (Par for this circuit—7 correct.)

1. The basic raw material for some of the best known plastics and synthetic resins is (a) chlorine, (b) carboric acid, (c) limestone, (d) petroleum.
2. Writing which has often been chemically bleached may be shown up by (a) the spectrum, (b) fire, (c) coal-tar dye, (d) infra-red photography.
3. If you expose plants to ultraviolet light, their growth will (a) be retarded, (b) be accelerated, (c) remain static, (d) the plants will die.

- The modern war tank was first predicted by the writings of (a) Verne, (b) Dean Swift, (c) Da Vinci, (d) Benjamin Franklin.
- The ocean's greatest depth, near the island of Mindanao in the Pacific is (a) 35,000 feet, (b) 75,000 feet, (c) 20,000 feet, (d) 25,000 feet.
- Dr. O. O. Jones told the National Academy of Science that he found the sign of the swastika in plant cells which became cancerous. Said cells were formed by (a) X-ray radiation, (b) an abnormal arrangement of chromosomes, (c) lack of nutrition, (d) phagocytes in the blood.
- If the present rate of consumption continues, the world's petroleum deposits will be exhausted in about (a) three centuries, (b) one thousand years, (c) seventy years, (d) 150 years.
- Carbonados are : (a) a species of Australian insect, (b) a fruit invented by Luther Burbank, (c) parts of an engine, (d) black diamonds.
- By the turn of the present century all known gases had been liquefied but (a) argon, (b) chlorine, (c) helium, (d) hydrogen.
- Persons with normal color vision can distinguish (a) about 160 different hues, (b) two thousand different colors, (c) fifty different colors.

WHAT'S MY ELEMENT?

The newest scientific guessing game! Be a scientific Sherlock Holmes and identify the element indicated by the following clues. Big reward offered for fast sleuthing.

- I am the most abundant and useful of all the metals. My atomic weight is 55.84. In the chemically pure state, I am a silver-white metal that crystallizes in the isometric system. I melt at 1505 degrees Centigrade. My magnetic properties are well known. However, if I am heated above 760 degrees Centigrade my magnetic powers disappear. What's my element? (Score 20, if correct.)
- I am the most tenacious of all the ductile metals, and I may be rolled into sheets so thin that the weight of a sheet of paper of the same size will be less than the weight of a sheet of my element of the same size.

Combined with oxygen and other elements, I am widely distributed as a constituent of rocks throughout the world. I am found in meteorites. Now what's my element? Score 10, if correct.)

3. Angstrom has fully demonstrated my existence in the sun, and spectroscopes show that I am found in the stars. Moisture and carbon dioxide in the air are injurious to me, causing me to react chemically. I am found in the human body. I am used freely in the manufacture of tools, weapons, and instruments. Now what's my element? (Score 5, if correct.)

WHAT'S MY PLANET?

More mystery! Inspect the following clues with your telescope and supply the name of the planetary culprit indicted.

- My mean distance from the sun is 35,700,000 miles. My periodic time is 88 days. My diameter is 2770 miles. The eccentricity of my orbit around the sun is greater than that of any other major planet. One side of my world perpetually faces the sun. What planet am I? (Score 20, if correct.)
- My mass is one-fortieth that of the Earth's. During the year I am a morning star in the east three times and an evening star in the west three times. I have no satel-

lites. Three-eighths of my planet is always dark. Now what planet am I? (Score 10, if correct.)

3. I am an inferior planet, the smallest world in the Solar System. Although I am the nearest planet to the Earth, I am seldom distinctly observable to the naked eye. I also bear the name of a metallic element that has been known since ancient times, sometimes referred to as "liquid silver." Now what planet am I? (Score 5, in correct.)

IT'S A DATE

We know you know your scientists and inventors. You should, if you've been boning up for these monthly quizzes. But how good are you at identifying the dates during which each scientist lived? Below are the names of ten scientists. Your job is to list them in chronological order, according to date of birth. The correct list should begin with the name of the scientist born first. (Par—seven.)

- Sir William Herschel; 2. Galileo; 3. Sir Isaac Newton; 4. Pascal; 5. Pasteur; 6. Lavoisier; 7. Avogadro; 8. Archimides; 9. Charles Darwin; 10. Copernicus.

WHAT'S YOUR SCIENCE I. Q.?

After you have completed the SCIENCE QUIZ and checked your results with the correct answers, get a slide-rule and calculate your score. Here's how you rate:

60-80—Superman.

50-59—Mental Marvel.

45-49—B.B. (Bachelor of Bookworms).

30-44—Try Crossword Puzzles.

15-29—Stick to Fiction.

0-14—Absolute Zero.

THE ROBOT BEASTS

By
**OTIS ADELBERT
KLINE**

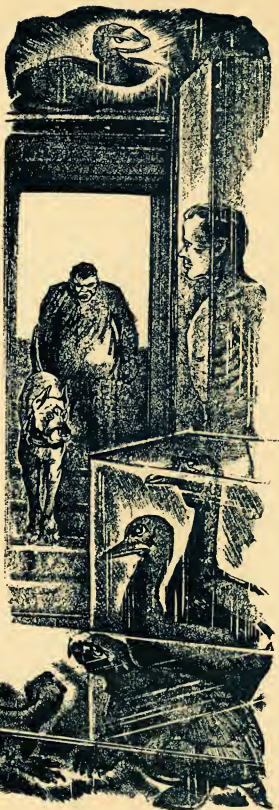
Author of "Stolen Centuries," "Race Around the Moon," etc.

Dr. Fletcher Created a New Era for Mankind, but One Man's Lust for Power Turned His Invention Into a Mockery!

THE large laboratory in the basement of Dr. George Fletcher's home did not look its part. In fact, anyone entering the place would think himself in a museum of natural history. What appeared to be a large variety of stuffed animals, birds and reptiles, stood about the place in large numbers. But, instead of standing on pedestals, the creatures stood on the concrete floor itself, or were lined up in rows on the shelves.

Some of those on the floor were in pens, while a number which occupied the shelves were in cages. Yet all were motionless as statues as Dr. Fletcher

In the center of the collection stood a lifelike figure of a handsome young man.



descended the stairs and came into the room with his peculiar, dragging limp induced by paralysis. He was closely followed by Skag, the Great Dane, who was his almost constant companion.

The doctor was short and rather potbellied, with a fringe of graying hair. His hands trembled constantly.

He contemplated these creatures of his wearily, yet with the pride of a creator. There were tiny mice and moles of various colors and types; rats, guinea pigs, rabbits, cats, dogs. There were turtles, frogs, salamanders, lizards and snakes.

And in the very center of the collection stood the doctor's two favorite subjects—a lifelike figure of a handsome young man, with the features of an Apollo and the physique of a Hercules, and a huge, sleek Great Dane which exactly resembled Skag.

For Dr. Fletcher they represented a lifetime of toil and study. For each and every one of these creatures was not merely a stuffed animal, bird or reptile, but a delicately and intricately constructed robot in which the scientist had attempted to induce a natural degree of the intelligence of its kind by brain transplantation.

The brains, immersed in a nutrient solution which required renewal only once in fifty years, were in crystal brain cases, from which wires, attached to electrodes, ran to various parts of the robot anatomies, acting as motor and sensory nerves.

With muscles and tendons of tough, contractile plastic, and a system of levers, gears, wires and chains of light, strong aluminum alloy; powered by supercharged, lightweight storage batteries in the body cavities, these synthetic creatures were designed not only to see, hear, feel and smell, but to move and react to peripheral stimuli like the original animals.

Doctor Fletcher did not enjoy killing these animals to perfect his experiment. He was not a cruel or ruthless man at heart, but a humanitarian and philanthropist.

GLORY did not interest him or motivate his actions. He thought only of benefiting the human race, of human minds in fatally injured or dis-

eased bodies. Once his experiments were perfected, he would change all that suffering.

And especially, he thought of the great scientific, inventive and artistic minds of the future which might be saved for the benefit of their fellows. Because of his invention they would be able to live not one, but many lifetimes.

As the doctor approached a pen in which a small black Scotty stood staring fixedly, he bent over and his trembling finger found a button concealed beneath the thick fur of the neck.

Instantly, the dog came to life, wagging its tail, leaping, barking and offering its head to be scratched. Its movements were so natural and lifelike that anyone not acquainted with the doctor's secret—and it was a secret shared only by one other human being—would have thought it a real, live dog.

This dog was his greatest achievement. The dog brain, which had now been in the case for some seven months, had learned to control the body perfectly, and showed by its reactions that it not only retained the canine intelligence which it had originally possessed, but was actually learning new things.

Many other experiments had not been so successful. Not one of the birds could fly. And a large number of the animal and bird robots had lost all intelligent movement entirely. Quite a number, also, were still without brains. Among these were the doctor's two latest creations, and, in his opinion, his greatest—the Great Dane, and the godlike youth.

Originally, the doctor had planned to use the brain of Skag in the Great Dane robot. But he had become so attached to the animal, and the animal to him, that he could not bring himself to order his assistant, young Doctor Frank Dornig, to perform the operation. Instead, he had purchased another dog of the same size, breed and build as Skag for the purpose.

With a sigh, he shut off the robot dog's battery, and made his dragging way to the swivel chair in front of his work-bench. Here, his shaking, fumbling hands found tools and some bits of wire and plastic which were needed to complete the mechanical Great

Dane as soon as possible.

Skag lay down behind his master's chair. But, a moment later, he bristled ominously, then sprang to his feet with a deep growl, at the sound of the footsteps of young Dr. Dornig.

Just as Skag had shown a fondness for Dr. Fletcher, he had exhibited a fierce dislike for the younger doctor. Doctor Dornig, nevertheless, fed and cared for him, and tried his best to make the dog like him. But to no avail.

Young Dr. Dornig was as handsome as his employer was homely; as sure and strong and deft as the older doctor was weak and doddering. The godlike robot had been modeled after him by the old doctor, and closely resembled him in every detail.

The old man was very fond of his assistant, and secretly planned to leave him all of his possessions, though this was something he kept to himself. Outwardly, he was usually gruff and sometimes stern.

He looked up as the young man approached, his masklike features showing no emotion whatever.

"The new Dane has arrived, Doctor," said Dornig.

"Good," Fletcher approved. "We're all ready for him. I have only a few small adjustments to make and a couple of wires to install. Won't take me half an hour. In the meantime, you may operate on the new dog in the surgical room, and dispose of the carcass in the usual way. Here's the brain case."

YEARs before, Dr. Fletcher had performed these delicate brain operations himself. But, as the shaking of his hands grew worse with the encroachment of the paralysis agitans, he had been compelled to give it up, and to find some one else to take his place.

Young Doctor Dornig, fresh from his internship, had gladly accepted the position, and had sworn never to reveal the secrets of the old doctor's laboratory until Fletcher was ready to give them to the world himself.

But the old doctor would not be ready to do that until he had achieved his supreme creation—a human thinking machine.

The synthetic body and brain case were ready, but as yet, no brain to control it had become available. It would have been possible to obtain the brains of some of the criminals who had been executed in lethal chambers with the brain unharmed. However, the doctor didn't want to put the brain of a criminal into this godlike robot of his. He wanted it to be governed by a brain with a clean ethical code, and intelligence and erudition that would be above the average.

Such a brain could only be obtained by accident—some one fatally injured whose mental qualifications measured up to his standard, but whose brain was intact. For such a brain, he would pay, from his immense fortune, a hundred thousand dollars to the heirs of the deceased.

Hospitals within a range of a thousand miles of his laboratory, which was on the shore of Connecticut, had been notified of this offer. Such things had been done before, time without number. And yet, the doctor had received only a few offers, and these from individuals whose mental powers were not, in his opinion, suitable for the completion of his experiment.

The right type of man, brought back to life through the doctor's scientific wizardry, could not only have the opportunity of renewing his acquaintance with relatives and friends, but might make the doctor a skilled laboratory companion and assistant, as well as a living testimony to his knowledge and skill. He had even thought of having Dr. Dornig remove and transplant his own brain in the case that was ready.

However, he knew that certain of his brain cells had been destroyed by paralysis, and that, as a robot, he would still have the same physical infirmities. So he had reserved himself only as the last desperate expedient.

Doctor Dornig started off with the brain case, then suddenly turned.

"Want me to take Skag out for a walk now?" he asked. "He hasn't been out this morning."

"Yes, take him out for a few minutes," Fletcher said. "But don't stay away long. I'm anxious to complete this job as soon as possible."

The young doctor took down a chain leash from the wall, and walking over to where Skag stood beside his employer's chair, snapped the hook through the collar ring. The big dog growled softly at his approach, but followed him in dignified silence after the hook had been snapped into place.

Dr. Dornig's expression of polite deference changed swiftly to one of avaricious cunning as he reached the top of the stairs. His usually steady hands trembled slightly, as he led Skag into the operating room where another Great Dane, almost the dog's exact double, was still confined.

TOALLY unaware of the old doctor's benevolent plans for his future, Dr. Dornig had plans of his own. He had kept the old scientist's secrets well because he had planned that they should benefit himself, and that one day they should make him master of a world empire. He was insanely jealous of the great mind that was housed in that weak, trembling body.

He was nerve-weary from the long months of confining, secret work, tired of carrying out the orders of the old man who treated him as if he were just another robot. Another robot, indeed!

Soon there would be another robot—a robot containing the great mind of Dr. Fletcher. And that robot would be compelled, by torture if necessary, to do *his* will, to carry out *his* instructions, to assist in making the vigorous, ambitious young Dr. Dornig master of the world!

He had gone over his plans a thousand times. As a robot under his domination, Dr. Fletcher would assist in the creation of robots which would, in turn, make more robots, and these more, until he should have an army of almost invincible warriors. Their brains would be supplied by vigorous young men and women kidnapped for the purpose—kidnapped at the stage when they could easily be moulded to his will, and trained to obedience and loyalty to Dornig alone.

Their brain cases could be surrounded by armor of stainless steel, that would turn machine-gun bullets. Their bodies, encased in cuirasses of

similar material, would do the same. They could not be gassed or drowned. Injuries to mechanical parts could always be repaired. Nothing short of a terrific force that would blow them to bits, a weight or blow that would crack the brain case, or an acid or disintegrating material that would attack the metal envelope, could really kill them. The entire robot body could be broken to bits, but if the brain case were still intact, it could easily be installed in another mechanical body.

He envisioned a mighty army of such robots setting out to conquer the world for him—robots flying strato-battleships and dive bombers, as well as strato-cruisers, aerial torpedo boats and smaller combat craft. Robots driving armored tanks and crushing all resistance before them. And eventually, robot armies carrying his conquests to every part of the globe, making him supreme master of the world!

The old doctor was almost helpless now. But Skag must be put out of the way first. Skag, Dornig realized, was dangerous. He chuckled softly, for he was about to transform Skag, also, into a robot!

Dr. Dornig permitted Skag to sniff the other huge Dane through the slats of the crate, in order to divert his attention while he prepared the needle. Suddenly, he sank it home, a terrific dose that paralyzed the big dog almost instantaneously.

Twenty minutes later, he placed the brain of Skag in the open brain case, poured in the life-sustaining solution, and sealed it. Then, he pushed the carcass into the electric furnace which they used as a crematory and closed the switch. This done, he opened the crate in which the other Dane was confined and placed Skag's collar around its neck.

He wanted to do this thing right. There must be no slips. He made sure there were witnesses to the fact that he had taken a Great Dane, which the neighbors could not tell from Skag, for a walk. He stopped and chatted with several of them before he cut across the thickly wooded acreage behind the little village toward the highway. Once on the highway, he removed the collar and struck the dog a vicious blow with

the chain. It yelped and loped away at top speed. That dog, Dornig reflected, would not be seen in these parts again.

On his way back, he paused long enough to bury the collar and chain. Then he returned to the laboratory. . . .

DR. FLETCHER had not been fooled by his young assistant's attempt to be casual when he offered to take Skag for a walk. As a matter of fact, the daily task had always been so distasteful to Dornig that he had never before suggested it himself, but had waited for the old doctor either to walk the dog himself, or request him to do so.

So engrossed was Dr. Fletcher, however, with his work, that it was some time before the little warning voice that had been trying to break through his preoccupation with his difficult and intricate task, finally registered on his objective consciousness. At that moment, he heard the door above open, and knew that his assistant was leaving the house.

He limped across the room and opened one of the iron shutters which guarded the secret of his basement laboratory from the world, then peered out.

As he suspected, Dr. Dornig was leading, not Skag, but the other dog. A glance at his wrist-watch told him that his assistant had had ample time to remove the brain of his canine pet and reduce the carcass to ashes.

He shook his head sadly, then mounted the stairs to the operating room. There lay the brain of Skag—it could be no other—in the brain case he had prepared for the other dog.

Laboriously, Dr. Fletcher climbed the stairs to the third floor. Then he mounted the iron ladder which led to his observatory on the roof.

This was fitted with a large, mounted telescope for scanning the heavens, but there were also several pairs of powerful binoculars for observing the terrestrial landscape.

He selected a pair and watched every movement of his young assistant, until he saw that he was ready to return to the house. Then he returned the glasses to their place, descended to his labora-

tory, and once more returned to his work.

As he sat there, mechanically completing his task, and awaiting the coming of his young assistant, he pondered the latter's cruel deception, seeking a motive.

He knew that Dornig disliked Skag, but reflected that he could easily have got rid of him months before had he desired to do so. Why, then, had he chosen this particular time and method to do away with Skag?

It was obvious that he had been scheming this very thing for many months, that he hated his employer as well as the dog. If he would serve the hated dog, thus, why not the master? Then, having turned both into robots, and knowing that the old doctor loved his canine pet, he might use his power over the latter to gain concessions from his former employer.

So disheartening was this revelation, that Dr. Fletcher began to wish himself dead and freed of such dreadful realities, forever.

His traitorous assistant, he knew, meant either to kill him outright, or turn him into a robot. Because of his vastly superior physical strength, Dornig was confident that he could do either at will.

But though he never had any proof of the treacherous intentions of his ungrateful assistant before, he had, long before he had employed the young doctor, known that, as the paralysis agitans reached an advanced stage, he must some day employ a skilled surgical assistant.

And he had been aware that such an assistant, realizing the world-shaking importance of his inventions, might turn traitor. So he had provided against such a contingency.

For a moment, Dr. Fletcher's trembling hand touched the lever of a switch above his desk, as if for reassurance. Then he hastily resumed his task as he heard the basement door click open. . . .

BACK in the laboratory, Dr. Dornig took up the encased brain of Skag, and, feigning weariness, descended the stairs.

"I can't tell you how sorry I am, Doctor," he said, "but Skag broke away

from me. I tried to catch him, but he got away in the woods."

The masklike face of the old doctor looked up from the work-bench. His expression told the younger man nothing at all.

"Never mind," said Dr. Fletcher. "He'll come back. He has lived here for so long that this place is home to him. Come, let us install the other brain. I am anxious to see how it will work."

For the next two hours, both men were engaged in the delicate task of installing the canine brain case, and clamping the many tiny electrodes into position. Finally, they closed the cranial cavity. The old doctor pressed the battery button on the neck of the huge mechanical dog with a trembling finger, and stepped back.

As had been expected, the Great Dane robot's movements were feeble and uncertain like those of a toddling puppy learning to walk. But they progressed so well during the next half hour that Dr. Fletcher was greatly pleased.

"Take the rest of the day off, Dr. Dornig," he told his assistant. "You've been working too hard."

"How about knocking off for a while, yourself?" the young doctor asked. "You work twice as hard as I."

"Ah, but this is my life. It's both rest and recreation for me. Run along now, and report as usual tomorrow morning. I have some experiments to occupy me this evening."

Dr. Dornig left rather reluctantly. Ordinarily, he was glad for a holiday from the gruelling, exacting work of the surgical room and laboratory. But today, he was a bit worried. He had planned to remain and watch the reactions of the dog. If Dr. Fletcher found out what he had done, he intended to subdue the old doctor at once and remove his brain.

But he didn't want to do this, yet, unless his hand was forced. For if he did, he would have to finish the work on the man robot himself, or be forever deprived of the value of the old man's brain. And he was not sure that he could finish the mechanical work correctly. Once it was completed, he knew how to install the brain case and

attach the electrodes. But it must work, once installed, or he could not make the old man his slave as he had planned and fulfil his own ambitious schemes.

However, since the dog showed no signs of revealing its true identity, he decided to leave.

"Thanks a lot," he said with simulated pleasure. "See you in the morning."

As the young doctor went out, the older man returned to his training of the robot dog. It was learning rapidly, and, because it contained the brain of Skag and resembled him, he subconsciously thought of it as Skag.

"Good boy, Skag!" he said, as the toddling, puppylike walk was presently replaced by the firm footsteps and upright carriage of a powerful, mature dog.

The robot dog understood, or seemed to understand, and to recognize his name. He cocked his huge head to one side, then reared up, placing both forepaws on the doctor's shoulders, exactly as Skag had always done.

The old doctor's hand trembled more than usual as he scratched the huge robot dog behind the ear, while it evinced every symptom of pleasure.

"Skag!" he exclaimed. "Good old Skag. You remember me!"

PRESENTLY, he sat down in his chair in gloomy meditation, thrusting the dog from him.

Instantly, the robot dog came over and laid its head on his knee, exactly as the physical Skag had done a thousand times. Suddenly the robot dog gave a savage growl, as steps sounded on the stairway—the footsteps of young Dr. Dornig.

In order to silence him, Dr. Fletcher reached down and pressed the button which was supposed to shut off the battery. But it didn't work, at first. Before he could press it again, that savage, revealing growl greeted the young doctor as he entered the room. Dornig could not help hearing it. He recognized its significance.

"So you have found out," he said, as the old doctor finally managed to shut off the robot dog's batteries. "I came back, expecting that you might."

"Yes, I've found out some time ago, as a matter of fact," Dr. Fletcher said. "That was mean of you, Doctor, merely because a dog growled at you. Skag had never harmed you."

"It was not mean, but the beginning of a great and glorious plan," said Dornig with feeling. "Why do you think I have been slaving here for you all this time? Do you think it was because of the miserable pittance you pay me? I've been a slave to you, subject to your every command and whim. But now, all that is changed. Now, I will be master, and you will work for me!"

"To what end?" asked Dr. Fletcher.

"I plan to build, not one or a few robots, but millions of them!" Dornig exclaimed savagely. "I'll turn them into impregnable soldiers. An army that will seize the U. S. Government for me, that will fly airplanes, drive tanks, man ships, and eventually conquer the world! An army trained to fight and to obey only me! You will help me to build the nucleus of this army, Dr. Fletcher. After that, you may remain on research, if you like—but only as my robot slave, subject to my every command!"

"And so you decided to use force on me if necessary, and fearing that Skag might protect me, got him out of the way first?" Dr. Fletcher asked softly.

"I had hoped that force would not be necessary, that you would see eye to eye with me and become my trusted lieutenant, and the director of all my research and production. In case you resist, I am fully capable of overpowering you. In case you decline to do my bidding, either as a man or as a robot, I have ways of torturing you that will change your attitude if not your views. Certain electrical impulses, for example, sent into the brain case through one of the electrodes—"

"Enough," said Dr. Fletcher, knowing what he meant. "Your scheme is perfectly clear to me."

"Then you will join me willingly?"

"No!" said Dr. Fletcher staunchly. "And rather than leave my inventions to you for such a foul purpose, I'll destroy everything—my plans, my laboratory, myself, and you with them, so that you will never be able to duplicate them!" He pointed with a shaky

finger. "You see this switch? It is connected with a charge of powerful explosive beneath the floor that will blow this place, and us with it. I am going to use it—now!"

DR. DORNIG laughed derisively.

"I took the precaution to put that little apparatus out of commission this morning," he said, grinning triumphantly. "No secrets of this place are hidden from me. And now, will you come quietly to the operating room, or must I use force?"

He took a loaded syringe from his pocket, pressed the plunger so that a drop of the paralyzing solution contained gathered on the point of the needle, then advanced threateningly.

"Go to hell!" cried the older man, and with one weak, trembling hand, seized a small hammer from his workbench to be used as a weapon.

The young man easily wrenched the hammer from Dr. Fletcher's shaking fingers, and sank the needle home. . . .

Dr. Fletcher recovered consciousness, to find himself standing on the floor of his own laboratory. Dr. Dornig was seated in the old doctor's chair before the work-bench watching him.

"Ah, Doctor," said Dornig triumphantly. "I see you have recovered consciousness. My operation and installation were extremely successful."

Dr. Fletcher responded, but the voice was not his own. It was the voice of the robot, modeled after that of Dr. Dornig himself.

"I could not prevent your carrying out this vicious deed," he said rasply. "But you may rest assured that I'll not be your puppet. And so long as I exist as a thinking robot, I'll turn every energy to only one purpose—the defeat of your cruel and inhuman ambitions!"

Dr. Dornig lighted a cigarette, leaned back, and exhaled a cloud of smoke with apparent satisfaction.

"I don't know about that," he replied. "You are my prisoner, and you will shortly decide to do my bidding. Either that, or suffer the tortures of the damned until you beg for death!"

He leaned forward and pressed a newly installed buzzer button attached to the desk. The buzzing was instantly amplified a thousand fold in the brain

of Dr. Fletcher—amplified to the point where it became a pulsing, vibrating agony. Dr. Fletcher knew that the young doctor must have connected the buzzer to one of the electrodes attached to his brain case.

He tried to reach the connection, then suddenly discovered that his wrists and ankles were stoutly manacled to two thick steel I-beams which Dr. Dornig had set in the concrete floor.

"So you feel it, eh?" Dornig gloated, releasing the pressure on the button. "Then you realize that you are entirely at my mercy. What is your decision now?"

"The same as before!" Dr. Fletcher snarled through clenched robot teeth.

"We'll see," said the young doctor, rising. "I'll give you a few hours to think it over. In the meantime, I'll continue some of my own experiments. I'm thinking of using mechanical dogs, like Skag, to fight in my robot armies."

He went over to where Skag stood motionless beside the robot which housed the brain of his former master, and pressed the battery button. Instantly, the big robot dog came to life.

For some twenty minutes, Dr. Dornig put him through his paces, and gave him various familiar commands which Skag obeyed with the same aloof dignity that had characterized his behavior toward the young doctor before his transformation into a robot.

"Interesting," commented Dornig to the old doctor. "Very. When you have helped me to construct some more man robots, and we have the brains installed, we'll build a few more of the Great Dane type. I'll leave you now, Doctor, to think things over. You will, for the next few hours, be accorded the luxury of pure thought, with no physical effort, whatever."

HE thrust out a finger, pressing the button which shut off the batteries that supplied energy to the robot of Dr. Fletcher. Then he carelessly pushed the button of the Great Dane robot and went jauntily to the stairway, mounting the steps two at a time.

Dr. Fletcher could not move, but he could think. And it seemed to him that his brain, stimulated by the powerful electric current that had been driven

through it some time before by means of the vibrator attached to one of the electrodes which was connected with his brain case, was ten times as productive as it had ever been before.

He could not move any part of the robot body, could not even turn or blink the eyes, which had been left wide open. But he had noticed that Skag's battery control button had failed to work when the young doctor had pressed it. And now, the huge robot dog was wandering disconsolately about the laboratory, frequently going to his old master's work-bench.

Presently, the realization came to Dr. Fletcher that the dog somehow sensed his presence in the room. If he could only convey to his old pet his present location, they might be able to work together and defeat the plans of Dr. Dornig.

He could not shout a command, but he could *think* one. Now, he concentrated all the power of his great brain in an endeavor to project it to the puzzled dog.

"Skag," he telepathed. "Skag! Come here!"

Mentally, he said this, over and over.

Presently, Skag began circling the robot figure which contained the old doctor's brain. Closer and closer he came, until an exploring nose sniffed at one of the manacled legs. The contact of robot to robot seemed to establish complete telepathic rapport for, with a sudden, joyous bark, Skag sprang erect, his paws draping the chest and shoulders of the motionless robot figure, begging to have his head stroked.

The pressure of one big paw on the battery button was sufficient to arouse the robot of Dr. Fletcher to full motor and sensory powers. He raised a manacled hand and patted the dog, still communicating with him telepathically. He did not dare to use the voice in the robot larynx. It might spoil everything.

When the dog had received sufficient petting, he lay down at the feet of his robot master.

Then, Dr. Fletcher, with the robot hands trembling exactly as his physical hands had trembled, found that despite his manacles he could lift them

high enough to open the chest and readjust the mechanical larynx until the voice bore a resemblance to his own.

But the manacles still held him to those stout I-beams, and unless he could break or remove them, he could do nothing against Dr. Dornig.

Lying on his work-bench at least ten feet beyond his reach, was his portable electrical welding machine, with its long coil of wire which made it possible to use it anywhere in the laboratory.

If he could only reach that welder, he could literally melt off his shackles. Suddenly, he thought of Skag. Once more, he brought a powerful telepathic impulse to bear on the faithful beast.

"Skag," he commanded audibly. "Go fetch my welder."

The dog went to the desk. But here, habit conquered, and he picked up the doctor's old slippers, which still rested beneath the desk.

"No, Skag," corrected Dr. Fletcher. "On the desk. The welder."

AT the word "no," the dog dropped the slippers, but still seemed uncertain of just what was wanted. Once more, the doctor sent that powerful telepathic impulse, and repeated:

"The welder, Skag. On the desk."

Then, to Dr. Fletcher's delight, the dog reared up, seized the machine in his teeth, and brought it to his master. The doctor took it with a word of praise for the dog, then quickly applied it to the manacles that held him.

Soon freed of his manacles, he first ripped away the wire attached to the buzzer which had been used to torture him. Then he walked over to his chair, one robot foot dragging as in life.

Suddenly, it occurred to him to try an experiment. The trembling of the hands, and other effects of his paralysis which had followed him into this robot existence, were due to the fact that certain brain cells in control of the motor nervous system had been destroyed by the disease. But he knew that man has thousands of excess brain cells which are never used in a normal life time. If these brain cells could be utilized, and trained to perform the task of those that had been destroyed—

He removed the top of the robot head, and began swiftly to readjust the

many tiny electrodes clamped to the brain case. He worked tirelessly for more than two hours, changing and experimenting before he had succeeded in correcting his trembling hands. Another half hour gave him full control of the bad leg. And still another removed the masklike expression from the once handsome face.

Now, he could think, move and act like any normal human being, but without hunger, thirst or fatigue. He was a veritable superman, not only in appearance, but in efficiency as well.

His brain was always keenest when he had something to occupy his hands. But all of the material on the work-bench had been cleared away. Yet, he must do some of his keenest thinking to defeat the ambitious schemes of Dr. Dornig. He suddenly recalled that the control button for Skag's batteries was difficult to shut off and needed readjusting.

He unscrewed the button, then bent over his work-bench to examine it. But at this moment he heard the basement door open, and the tread of Dr. Dornig on the stairs.

The robot Skag growled softly at Dr. Dornig's approach. The latter paused in amazement, when he saw Dr. Fletcher.

"So," he exclaimed. "You've managed somehow to free yourself. Well, I'll soon fix that."

He sprang forward, and the old doctor stood up to meet him. As Dr. Dornig thrust out a finger to press the control button, he felt his wrist caught in a grip of iron—a grip that had ten times the strength of that of the athletic young doctor. Then he was hurled backward, so that he crashed into, and overturned a heavy table.

Instantly, the young doctor sprang to his feet, and realizing that the old doctor had recovered his dexterity, and that his own strength was futile against that of this superman he had helped to create, he picked up the table. Tearing it free from its electrical connections, he hurled it straight at the robot doctor.

It struck the robot body full in the chest, and knocked it off balance.

Dr. Fletcher felt himself crashing to the concrete floor, the heavy table

on top of him.

With a cry of triumph, Dr. Dornig sprang forward once more. But at this moment, Skag went into action. A fierce roar burst from his throat, as he reared up, his fangs snapping for Dr. Dornig's throat.

The latter laughed derisively, and reached for the control button to shut off the robot dog's battery. To his horror, he found that the button was missing. Snarling, he concentrated all of his attention on keeping those snapping fangs from his throat.

The muscles of the huge mechanical brute were untiring and would go on functioning as long as the current remained in the battery. The muscles of the powerful young doctor were tiring rapidly under the terrific strain, and he was growing weaker from a loss of blood. His hands and arms were ripped open in a score of places.

Growling, the mechanical dog sprang in for the kill. He seized the throat in his fangs and quickly ended the existence of Dr. Dornig and his mad dream.

In the meantime, old Dr. Fletcher, who had just succeeded in freeing himself from the weight of the table and the heavy machine attached to its top, rose to his feet, horrified.

But despite his emotional reactions, he was first, last and always, a scientist. Here, he reasoned, was a healthy brain of the type he had been waiting for during these long months. An intelligent brain, alive and uninjured, and adapted to control a robot body.

If he should act at once, he could now perform the operation with deft, sure strokes, and immerse the brain in a nutrient solution until a new robot body could be constructed. He could save the life of his former assistant and make him a semi-immortal, as a robot.

Dr. Fletcher was not of a vengeful nature. But another thought suddenly interrupted him as he reached a steady, powerful hand which answered every command of his brain, for his instrument case.

The brain of the young doctor was perfect, physically, but this brain would carry with it the ruthless ambition to dominate, the sadistic cruelty which had been a part of its thought proc-

esses in life.

Some day, it might trick him, overcome him, and begin the work that would lead to the most hideous holocaust of blood and anguish the world had ever known.

Two tears coursed down the robot cheeks, revealing the agony which wrung the soul behind those mechanical features.

Turning his face away from the bloody horror which lay on the floor, he sought and found the severed connection which led to the charge of explosives in the secret chamber below.

Swiftly, he found and repaired the cut in the wire. Next, he connected the alarm clapper of his desk clock to the lever that would detonate the explosives, and set the alarm for five minutes hence. "Come on, Skag," he said. "We're going for a walk."

SKAG frisked about him joyously, as he had always done before his transformation at the prospect of a hike with his beloved master.

The two ascended the stairs and left the house, a godlike superman, and a powerful superdog.

Dr. Fletcher was through with his laboratory, finished with his great work which he had performed primarily for the benefit of his fellow man.

His inventions had not brought to humanity the benefits of which he had dreamed. And he realized, now, that in the wrong hands—the hands of ruthless seekers of power—they might bring infinite tragedy and sorrow.

However, they had, through the action of his former assistant, brought him a powerful, godlike body, and the prospect of living another lifetime, perhaps more, together with the one creature in the world that loved him.

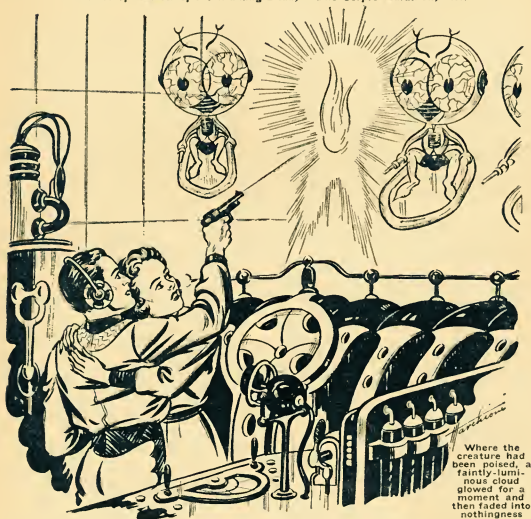
As he and Skag reached the highway, a tremendous explosion rocked the countryside. Dr. Fletcher didn't even look back. "Come on, Skag," he said. "We're headed for a new life—and a new freedom."

Skag, as if he fully understood, gave vent to a joyous bark. He chased a stray cat up a tree, and then returned with his tongue lolling, to trudge contentedly in the footsteps of his master.

THE CRYSTAL INVADERS

By JOSEPH J. MILLARD

Author of "Master of the Walking Dead," "The Corpse Marathon," etc.



Where the creature had been poised, a faintly-luminous cloud glowed for a moment and then faded into nothingness

JOYCE ALLEN came bursting into the rustic laboratory, her tiny booted feet stamping snow on the oaken floor. She grinned affectionately at the lanky form of her husband, hunched over his short-wave radio transmitter, and hung up her frost-coated coat.

"Eleven above zero and the mercury's dropping like one of my cakes,"

The Marauders From the Mysterious Abyss Thrived on Mortal Energy—But They Couldn't Take It When Gary Allen Turned on the Heat!

she announced gaily.

Gary Allen winked at her from beneath the black cups of the headphones he was wearing. He stabbed a finger at the microphone before him, in a silent signal to her that he was on the air.

"Oops—sorry!" Joyce breathed. She picked up the companion headset that lay beside the portable microphone her husband was holding, fastened it to her ears.

The suave, dulcet voice of the ABS announcer trickled through the earphones, setting the stage for Gary Allen's sensational broadcast scheduled to follow.

"In a moment you will hear Gary Allen, the man who has refused a dozen professorships because he prefers to divide his time between adventuring over the face of the Earth and developing new scientific discoveries in his private laboratory in the Berkshires. We take you, now, to Gary Allen's laboratory for a trip to Venus on the waves of his space-prober. Take it away, Gary Allen!"

Joyce pointed one forefinger at her husband and whittled at it with the other, grinning impishly. Gary was scowling now, and she knew it was because the announcer had been praising his contributions to science. There was nothing Gary Allen disliked more than eulogies, and nothing Joyce would rather tease him about.

Gary gave her a look that promised future mayhem and snapped the switch on his portable mike. A moment later his rich, deep voice was flowing out over the air.

"Good evening, ladies and gentlemen. I'll explain the operation of the space-prober as simply as I can without boring you with scientific details. Briefly, the prober shoots out a directional beam of energy waves that, like the mysterious cosmic rays, have the power to penetrate the Heaviside layer and fly out into space. These newly-developed waves travel until they strike some major body, like a planet, then they are reflected back.

"But due to certain characteristics of the waves, they are reflected differently by different kinds of matter. When our special receiver here picks

up the reflected waves, they reveal by their broken pattern the physical nature of the reflecting body. Eventually we hope, by a variant of the television principle, to change that sound pattern to an actual visual picture of our target. But for now I'll have to interpret the sound pattern for you as the receiver instruments analyze it."

Carrying the portable mike, Allen stepped over to a rectangular cabinet on a facing table.

"For tonight's test we have the transmitter focused at Venus. It will take several minutes for the beam, traveling at the speed of light, to reach the planet Venus and return. So during that interval, I will explain our test in greater detail. Now listen to the regular sound of the beam being transmitted for thirty seconds. . . ."

GARY ALLEN'S lean, deft fingers depressed a key. Thousands of loudspeakers throughout the country carried that click and the resulting drone of power to the ears of listeners. At the end of thirty seconds, he cut the power.

"Venus being in inferior conjunction now, about twenty-six million miles from Earth, it will take almost two minutes for that beam to reach the planet and the same length of time for it to return to our receiver. During that time, I will try to give you a pict . . ."

Allen broke off, jaw dropping and eyes widening as he stared incredulously at the long bulk of the receiver. It had been barely ten seconds since the tremendous power of the prober had kicked that beam out into space, yet already the loudspeaker was beginning to whine and crackle with an unmistakable reflected sound pattern.

"It's impossible," he whispered to Joyce, the microphone in his hand completely forgotten. "There couldn't be any object that close to Earth in the region we sent the beam—unless it's a dark asteroid the telescopes couldn't show. But even that is impossible . . ."

"Gary, look!"

He whirled at the sharp cry to see Joyce tearing the earphones from her head. She pointed a trembling finger

toward the huge bank of receiver panels across the room.

"What is it, Joyce? What's happened?"

"Lights! Look at them, Gary. Tiny pinpoints of light that just came shooting up out of the receiving coils!"

He spun back, then, and saw them—two minute but unbelievably brilliant motes of pure light that hovered in the air above the bulky receiving apparatus. They were like sparks, yet somehow different, and they seemed to dance and vibrate with a will of their own.

As he stared in bewilderment, a third glittering speck floated up beside the pair. Then, after a moment, still a fourth appeared.

Simultaneously, all four points of light began to move, swelling rapidly in size but moving apart to keep their own relative positions in the air. But even their swift growth was abnormal.

It was exactly as though the specks were rushing toward them at tremendous speed, coming from inconceivable distance into remote space, and only growing in apparent size as they rushed closer.

"What—what on earth are they?"

Joyce whispered, trembling a little as she pressed against her husband's tense figure.

"I don't know," he answered grimly, "but I'm going to find out!"

SOME instinct, generated by a premonition of danger, made Allen reach back and snap off the power to the receiver of the space-prober. Eyes still intent on the dizzying phenomenon, he fumbled in a drawer of the table for his automatic pistol. He was suddenly thankful for the idle habit of keeping that gun always loaded and handy, though he frowned at his own instinctive fear of what was probably an electrical phenomenon.

Then terror dried his throat. For the four figures had suddenly stopped expanding. Now they hovered, unsupported, in the air before him, suspended in nothingness.

Through disbelieving eyes Allen beheld four of the most fantastic, incredible creatures that the human

mind could imagine! They were otherworldly, grotesquely manlike in appearance, with small, perfectly-proportioned bodies surmounted by huge, bulbous heads—heads that bore hideous travesties of human features. Two immense saucerlike eyes met and overlapped, and where the bridge of a nose should be there was no nose at all. Five horizontal gridlike slits filled the mouth-space and a small circle of holes around a central hole took the place of normal ears.

Each of these hideous little figures was seated on a lozenge-shaped tray that seemed at once a vehicle on which to ride and a part of the creature's body. In one extended hand, each figure held an object that resembled an ordinary cathode-ray tube with one end open.

But most amazing of all, the creatures and their sledlike seats were constructed entirely of *glass*!

Allen could see through every part of their transparent figures. There were no signs of bodily organs inside their bodies. The only object visible was a small cylinder suspended in the center of each figure's chest. Fine, loosely-coiled wires ran out from these into each limb.

That was all. No organs of life, only that enigmatic small cylinder. Yet the crystal figures moved, shifting restlessly in midair with a sort of super-Brownian Movement.

And there was intelligence. Allen could not doubt that, for he could feel the almost-physical impact of probing, alien stares from those incredible crystal eyes.

Cold globules of sweat came out on his forehead and trickled down his face. The checkered butt of the automatic became slippery in his clammy palm. He controlled his nerves with an effort.

"It's a trick of some kind," he whispered hoarsely to Joyce. "Some idiot is showing off a new kind of robot control, using these glass dolls to—"

"*It is no trick!*"

The words came, not from the figures, but from the headphones still pressed to Allen's ears. So loud was the eerie voice that Joyce, her head pressed against her husband's shoul-

der, could hear it as clearly as though she were still wearing her own headset. The voice that phrased them was unhuman, oddly-accented, with a metallic timbre that betrayed its unnatural origin.

IT is no trick. We of Akku have long sought a bridge over into your dimension in order to make the physical passage through to your world. When the wave-beam of your instrument finally built that bridge, we hastened across. We have been ready to come for some time, but until tonight your beam lacked sufficient power to open up the gateway for us."

"Akku?" Allen echoed blankly. "What—where—"

"Akku is our world, the chief planet of a universe that interlocks with yours, yet lies along a totally different plane. We had long suspected the existence of such a universe but we could never be entirely sure. Then came the first weak beams of your instrument, opening small windows through which we could gaze, and we knew, then, that a bridge would soon be built."

"Another dimension," Allen breathed, forgetting everything but the fantastic reality of science's dream. "A whole universe of other worlds occupying a different space-time dimension. Then that was why I got an almost immediate reflection pattern from the beam. I wasn't probing our space at all. I was actually getting an extra-dimensional reflection from your world."

"It might be," admitted the voice, blankly.

"But—but, what kind of creatures are you, with glass bodies and no organs? And how is it you can communicate with us this way?"

"On Akku," the voice answered with faint scorn, "only lesser creatures have need of physical bodies. We, who represent the highest life-form, are but invisible masses of vibrating energy-force and consciousness. It was only for the ultimate journey into your cruder atmosphere that we clothed ourselves in these protective shells. These crystal cases insulate us from the destructive bombardment of free energy rays. Naturally, we have no

difficulty tuning our vibrations to those of your instruments and, since time is very different in our dimension than here, we had ample time to learn your primitive language."

"But getting across," Allen demanded eagerly. "What was the passage like? Was there intense heat or cold or any sensations when you passed from your dimension to ours?"

"Heat? Cold? Oh, those crude physical impressions that harass physical bodies. We higher forms do not feel any sensation except energy vibrations."

Joyce Allen moved nearer her husband, reached for his free hand. His strong, firm clasp reassured her. The creatures seemed fragile and harmless now.

"Why did you want to come over into our world?" she ventured. "Are you explorers or scientists, or just a sort of good-neighbor committee?"

There was a long silence. For a moment Gary got the sharp impression of an inaudible but tense exchange of thoughts among the four. It was all the more uncanny because the glass beings showed no sign of movement or expression. Suspended in mid-air, in a gravity-defying pose, they made a startling picture.

"We came for food," the voice said at last. "On Akku our food supplies are very nearly exhausted. You, with your highly-organized nervous systems, can keep us supplied with rich sustenance for centuries."

"Food?" Allen stared in blank incomprehension. "What kind of food would beings like you require?"

"Energy, of course. Our energy-bodies weaken and eventually dissipate unless constantly renewed."

"You mean electricity?" Joyce asked. "Or radio?"

THE answer was heavy with contempt.

"Would you eat the rocks or dirt of your world? We require the subtler energy of emotions—hate, fear, anger. The lower life-forms of Akku and its neighbor worlds have fed us richly for centuries. We had merely but to stir up fresh wars and revolutions when old ones seemed about to stop. But

unfortunately, newer generations are being born with senses too dulled to appreciate exquisite hates and fears. The younger ones have become almost worthless, in fact."

"Wait a minute!" Gary Allen barked, feeling a surge of blazing anger sweep over him. "You mean you parasites lived by torturing living creatures into fear and hatred and anger? And you think you're going to move in and stir up wars and riots and all sorts of emotional hurricanes here on Earth just to glut yourselves?"

"Naturally," the voice purred. "It is the law of life that the lesser life-forms are created for the enjoyment and use of the higher beings. Your emotions seem to be particularly sharp. We are already growing stronger from the currents of your anger."

Without warning, the four figures darted swiftly at the two Earth people in the room. The sudden, effortless motion of the crystal figures was concerted, as though all were controlled by the same unit.

The sight of the grotesque creatures leaping at her was too much for Joyce's strained nerves. She shrank back against Gary's rigid figure with a sharp cry of alarm.

"Splendid!" the voice exclaimed. "Such powerful energy. We will take the woman back with us for experiment to decide whether to transport your population to Akku or for us to emigrate to your world. We will keep you here to operate the beam that bridges our worlds."

"The hell you will!" Allen roared hoarsely. "I'll teach you to generate some fear-currents of your own."

The automatic flamed in his hand, filling the small laboratory with echoing thunder. One of the hovering glass creatures dissolved in a shower of glittering, tinkling crystal. The glass sifted to the floor but where the creature had been poised, a faintly-luminous cloud glowed for a moment and then faded into nothingness.

But Gary had no time to enjoy his triumph. At the crash of the shot, the three remaining figures whipped into motion, leaping and darting about the

room at an incredible rate of speed that registered as no more than a blur of light to Allen's dazed senses.

He spent three shots in a futile effort to hit another of the elusive crystal beings. But the fleet, erratic movements made a direct hit impossible. And he had no ammunition to waste on blind volleying.

UNTIL that moment, Allen had regarded the crystal invaders both helpless and harmless. They seemed to have no weapons, no armor, and their glass bodies were rigidly inflexible. Now he knew how wrong he had been. Their effortless energy-motion was more effective than any metal armor. And they had no need of flexible bodies, for they could tilt and bank and dart from any angle they desired.

Moreover, they were not weaponless. While Gary, clutching Joyce into the protecting circle of his arm, sought frantically for another clear shot, the queer tubes which each creature held began to glow with faint luminescence.

Tilting forward in the air so that the three tubes pointed at Joyce and Gary, they hovered for an instant. A sharp whiplash of pain against Gary's left arm numbed his fingers so that the portable mike he had been unconsciously clutching tumbled to the floor. Joyce cried out sharply and at the same time another pain stung Gary's right hand, making him drop the gun.

He staggered, suddenly feeling inexplicably weak and dizzy. And in that moment he felt the impact of powerful thought-vibrations pounding against his brain. Irresistible powers were gaining control of his mind.

Gary fought against the usurping of his will power, but it was hopeless. Then he felt it—the first command. An unspoken force ordered him to turn on the space-prober again, to let more of the crystal invaders come through.

Before he realized it, he was moving toward the instrument, blindly obeying the mental command.

The significance of what he was

about to do hammered at his subconscious. They were making him turn on the machine. Hordes of the crystal invaders would be able to reach Earth. They would spread out, attacking humanity, weakening them with the strange force-beams. They would gain control of human wills to incite war and violence. When the horde had sated itself from a ravaged Earth, they would take the survivors of the holocaust back to Akku as slaves.

Gary Allen's fingers were upon the prober's switch, about to open up the gateway to the dimensional world outside, when Joyce's sharp cry lanced through his dazed docility. The sound snapped him back to momentary consciousness, gave him the strength for one last flame of resistance.

He concentrated strongly. He must break through. . . . Had to! Then with a terrific effort, he broke the shackles of the spell. He bent and caught up the automatic he had dropped. He knew that his freedom would be one of seconds, his chances of hitting one of the surviving invaders almost nil.

He whirled, feeling the first lash of the invaders' numbing rays, and used his last ounce of strength to fire one shot from the heavy automatic into the very heart of the space-prober. Coils and tubes dissolved with a crash before the impact of the heavy slug.

Allen knew a single instant of grim victory at that sound. Then the combined beams of the three weird tubes lashed at him and his senses fled into darkness before the crushing agony of their force.

HE regained consciousness to find himself lying on the floor with his head in Joyce's lap. Across the room he could see the three glass creatures hovering above the wreckage of the smashed space-prober.

"Joyce," he whispered. "You're all right?"

"I haven't been harmed," she told him dully. "They made me throw your gun away and plug the speaker into the radio so they could talk to us both." She laughed wildly. "They won't hurt us. They want us—alive."

"Hang onto yourself," Gary warned, gripping her hands as his strength slowly came back. "We've got to find some way of smashing those devils before—"

The loudspeaker suddenly rasped ominously.

"You will repair the machine you broke at once. It is necessary to bring more of my race through at once." The voice was cold, precise.

"I can't," Allen said sullenly. "It's smashed now. It can't be repaired unless I send away for a load of new equipment."

"You will begin at once," the inexorable voice insisted. "Your mind told us differently while you lay helpless. It told us that you had ample spare instruments in your store room. Get that equipment immediately."

"You go to the devil!" Allen flung at them.

The three figures darted at him, too swiftly for his eyes to follow. Rays that were evidently some projection of their own energy-substance lashed at him mercilessly. Finally, when he was too numbed to resist any longer, they seized possession of his will again. Slowly, like a man in hypnotic trance, Allen arose to his feet.

But this time, instead of sending him to the broken prober, they forced him to turn and claw his own hands at Joyce's unprotected throat. Though he fought the urge until his body ached, he was powerless to stop his own hands from tightening.

Abruptly the grip of his hands loosened at a silent command. He stepped back, staring in horror at the purpling bruises on her pale throat.

"It is inconvenient and tiring," the cold voice said, "to keep your mind and will under full control at all times. Therefore you have been shown what your punishment will be if you resist or attack us again. Is that clear?"

Allen nodded in helpless rage, conscious that the hatred and terror in his heart and Joyce's were constantly supplying new energy to their captors.

"Then begin. The woman will aid you in repairing the broken machine. Waste no time."

For the next hour, the two helpless

humans worked at the re-creation of the machine that held earth's downfall. As they worked, Gary's mind spun feverishly in a desperate quest for some method of defeating the fearsome triumvirate his experiments had unwittingly loosed upon the world.

His own helplessness in the face of the terror he had brought was maddening. The very fragility of those shimmering crystal shells was a mockery.

A HANDFUL of pebbles, thrown by a child, could smash those thin bodies, dissipating the malignant energy they housed. Even an accidental blow against the wall or one of the cabinets would shatter the glass. But the beings had an uncanny ability to avoid obstacles. Probably, their senses were tuned to a different time-world, geared to absorb and react on impressions at their bewildering speed of flight.

There was nothing he could do—nothing. Unless his frozen brain could contrive some absolutely certain means of destruction, one that would instantly annihilate all three of the glass figures at the same time, he was helpless to do anything but bow to their dictates.

In spite of everything Gary dared do to delay the work without arousing suspicion and retaliation, the new space-prober was growing out of the wreck of the old one with alarming swiftness. The device, for all its unequaled results, was comparatively simple in construction. It was evident that unless he thought of some method of conquering the crystal invaders before they could use the repaired machine, he would be unleashing a doom over Earth that could never be crushed.

Glass! Glass! The word and the thought were a spinning mockery in Gary Allen's brain. Glass was so fragile, so easily shattered. Even sound vibrations could split glass, he remembered. Once, in an old physics experiment, he had seen a crystal goblet broken into bits by the invisible vibrations of some note played on a violin. He vaguely recalled that the note was high A. But nowhere in their isolated mountain laboratory was

there a violin or any other suitable musical instrument. How could he possibly smash those glass entities? He pondered.

He thought of rewiring the radio receiver to produce a high-pitched heterodyne note. But Allen discarded the idea quickly. In the first place, the crystal invaders would never give him the chance, and in the second place, a note high enough to shatter their glass shells would have the same destructive effect on the radio's own tubes. So that was out.

Allen's armistice with the crystal men was almost over. When this last condenser was wired into place, the space-prober would be as good as new and ready to commence its hellish operation. The glass invaders would start pouring through.

SECURING bus-wires for his last wiring job, Allen cast a longing glance out through the laboratory window. It was so beautiful out there, so peaceful, with moonlight glittering on the fresh snow. It must be getting much colder—

Colder! He turned away quickly, lest the hovering entities see the quick flare of hope in his eyes. Cold and heat! It was cold outdoors—but warm within the laboratory. A powerful oilburner in the basement kept the interior of the room heated.

Gary's mind picked at a slender, dangerous chance that might succeed. Cold outside—warm within. It might work! The radio receiver was still turned on, ready to carry audible commands from the hovering taskmasters. Everything was set for his desperate gamble.

With a warning glance at Joyce, he bent so that his body concealed the movement of his fingers for a moment. Hurriedly he unscrewed one of the terminals of his power supply, leaving the connecting wire teetering and barely maintaining contact.

The result was a sudden violent outburst of crashing static from the loudspeaker as the loose terminal created a shower of artificial static that was picked up by the radio.

"What is that?" the voice of the glass beings shouted through the

speaker, barely audible above the ear-splitting din. "What have you done?"

"I didn't do that," Gary bellowed back, fighting to keep the tension out of his voice. "It's static. A cosmic cloud must have struck the antenna. You know yourself that our atmosphere is charged with a lot of free electricity. I'll have to climb up and reset the antenna or all our equipment is liable to burn out."

He saw Joyce staring wide-eyed at his senseless gibberish and prayed that she wouldn't give his ruse away by some unconscious contradiction. He could sense the uncertainty of the glass figures as they jittered in mid-air. They had already expressed their ignorance concerning radio and Earth's atmospheric conditions. It was on that ignorance that he was banking now.

"What must you do?" the voice cried at last.

"Go outside, climb the antenna mast and change the pitch of the wires," Allen answered.

"Very well. But two of us will accompany you to make sure this is no trick. The other will remain to guard the woman. And do not waste time. We must get through to Akku at once."

Only two were going. Allen hid his disappointment as he climbed into his coat and fur cap. Still, if he could eliminate two of the three alien creatures, he stood that much better chance of eventual triumph. He stopped in the doorway and risked everything on one short order to Joyce.

"It's getting cold in here," he said. "You'd better turn the heat up to the top. Get it hot in here. *Hot!*"

He went out, with the two glass guardians hovering close, tilted so that their stinging force beams could lash at him at the first sign of treachery.

IT was bitterly cold outside and the air was like a knife in his lungs. Hampered as he was by heavy overcoat and thick mittens, it was a hard and dangerous job to clamber up the icy lattice work of the antenna mast. Gary made it seem much more arduous and time-consuming than it was.

Time was the most important element in his plan, now. Time and Joyce's grasp of what he was attempting to do.

His efforts to delay every movement were doubly dangerous out here. There was no radio by which the glass beings could give orders. If they decided to urge him to greater speed, they might attempt to accomplish that with the lash of an energy beam or by seizing his will. Either means would make him momentarily weak and dizzy, a condition which would mean almost sure death on that perch.

He reached the top at last, every nerve crawling at the sinister watchfulness of the two alien guards, and set about making a great task of deliberately clipping and resplicing the wires of the antenna. When all the wires had been clipped and spliced, he cut away lead-in cables and shifted them, changed insulators.

The cold bit through his mittens and numbed his hands. His nose and cheeks felt frost-bitten and his feet were like aching clubs.

But that same cold was, he hoped and prayed, chilling the thin crystal bodies of the hovering watchers, dropping the temperature of the fragile glass closer and closer to the zero temperature of the night. The glass beings could not sense the cold. They themselves had boasted to him that they could not feel crude physical sensations.

When Allen dared delay no longer, he worked his way stiffly down the mast to the ground while the glass entities showed their impatience by dancing wildly around his head. He strode to the door, praying that Joyce had understood his words, praying that his gamble would work.

Heat and cold and thinnest glass. . .

Gary Allen threw open the door and clumped into the laboratory—and into a blast of terrific furnace heat that struck his cold face like a searing wall. He saw Joyce staring at him, her face drawn to a waxen white by the sapping heat that was pouring into the small room from the raging oilburner. Above her, the third glass creature teetered nervously, impervious to the terrific heat.

Allen crossed the threshold and

made as if to slam the outer door. Instantly the two crystal invaders who had been outside with him sped for the narrowing opening and through it into the room. It was what Allen had calculated on; their fear of being shut out driving them from bitter cold into blazing heat at top speed, without a moment's hesitation for adjustment.

Crack! Snap!

A SHOWER of glittering crystal slivers dropped from the darting figures and tinkled to the floor as the chilled glass shattered from the intensely heated air of the room. Two faint clouds of luminosity, set free by the shattering glass, hovered for a moment in the air. Then the clouds were gone, whirled away into harmless nothingness by the alien atmosphere of Earth.

"Gary, look out!"

Joyce's sharp cry warned him in time. He whipped around to see the surviving glass figure dart toward him. Allen dodged frantically, caught the stinging lash of the energy beam on one arm as he rolled away from its full force. A thin voice was screaming incoherently above the still-crackling static in the radio and feeble, impotent fingers were clawing at his mind.

"Throw things!" Allen bellowed, dodging and twisting. "The thing hasn't much energy by itself. It must have been the combined force of all three that beat us down before. Throw anything and everything that might break that glass!"

There followed a nightmare of running, dodging, pursuing and fleeing. The advantage now lay with Joyce and Gary because when the creature hovered to aim its energy beam at one, the other was given an opportunity to hurl something. A dozen times one of them escaped the full power of the ray by a hair.

Allen leaped about, searching frantically for some heavy object he could use as a weapon. His eyes fell upon an open package of wood screws used for assembling instrument cabinets. He snatched up the entire box in mid-stride, whirled and threw its contents straight at the streaking figure.

There was a patter of metal against

walls and furniture, a sharp tinkle, then a single dull *plop!*

The last crystal invader stopped short in mid-air, then disintegrated into a shower of broken glass.

"Gary! Oh, Gary, we've won!"

Joyce threw herself into his arms, panting, laughing and crying at the same time from sheer reaction. "The world is saved from all that horror."

"It will be," he corrected grimly, "when I finish one important job."

He crossed the room, knocked the rewired space-prober to the floor and methodically trampled on it until not a tube, coil or connection remained intact.

"Gary!"

HE whirled to see Joyce staring dazedly at the portable microphone that still lay on the floor where it had fallen from his hands at the crystal invaders' first attack.

"Gary! The transmitter has been turned on all this time. Everything that's happened here has gone out over the air to millions of people." She began to laugh, some of the old dancing lights coming back into her eyes. "Gary," she teased, "you're a hero to the world this time, whether you wanted to be or not."

He demolished the last tube with a well-placed kick and started across the room, a twinkle in his eyes.

"Then the dear public can hear the hero's wife get a spanking she's been earning for some time."

The telephone rang sharply, stopping him in mid-stride. He went into the hall and scooped up the receiver.

"Telegram for Gary Allen from Hawkins of the Federal Radio Commission, Washington, D. C.," the voice of the operator reported. "It reads: 'Your station license revoked pending investigation of Men-From-Mars fiction story broadcast this evening. Stop. This is flagrant violation of law concerning broadcast of fiction stories tending to create panic.'"

Gary Allen pronged the receiver and stared at his wife for a long time. Finally he spoke.

"Hero?" he said. "I'm Bad Boy Number 1. And how can we prove otherwise?"

REMEMBER TOMORROW

*A Complete
Scientifiction Novel*
By **HENRY KUTTNER**





Beth'ya Dorn

CHAPTER I

Strange Awakening

STEVE DAWSON was sunk—in more ways than one. Only a thin shell of metal protected him from the tons of water overhead. He was alone, stranded at the bottom of the sea in a tiny bathysphere that was like a bubble in a vacuum.

"I'm going to die," Dawson told himself hoarsely. He listened to the echoes of his words within the hollow globe, the first human sounds he had heard in thirty hours.

Now that he had given voice to the thought he had previously evaded, he felt oddly relieved. A sense of strain was, somehow, gone now. And after all it was surely best to face the darkest side of the situation, rather than cling to false hope. So many of his hopes had already been shattered—when the cable and telephone line had broken during the storm, ending all possibility of communication with the *Adventurer*, riding the gale fathoms above this Caribbean deep. Each time it had been worse.

Rescue was impossible, Dawson realized. No divers could reach this depth. Yet it was impossible for him to resign himself to death. More than thirty hours had passed, he guessed. Purposely he had not looked at the chronometer since opening the fifth oxygen tank. It was not pleasant to watch the slow progress of the hour-hand, crawling inexorably toward doom.

The man took out a cigarette, hesitated, and finally lit it. Why not? He could afford the gesture—there were so few that he could make now. He sat on the floor, his back against the curving wall, staring at the port.

Outside, through the midnight black of the ocean floor, a spot of dim light swam into view and was gone. Some luminous-organic fish. If all had gone well, he would be cataloguing these denizens of the abyss now, capturing some through the special valves for delivery to the *Adventurer*. And then, within a few days, the ship would head back to Florida, and he would return to New

Fate Hurlled Steve Dawson Across the Channel of the Centuries Into the Perfect World of the Future—But He Found a Shadow Over This Utopia That Made Him Yearn for the Past!

York where Marian would be waiting—
Mustn't think of that. Think of something else—anything else. . . .

The museum expedition. The scientists, with their specially-built bathysphere, and their newly-discovered gas that would preserve safely the undersea life of the lower depths. Always before deep-sea fish would explode when brought to the surface and pressure removed. But this new gas, Dawson remembered, had the property of somehow preserving, of "freezing" tissue.

It was simple enough. The bait was already in the various valve-compartments. Dawson merely had to open one, let the fish swim in, and close it again, afterward releasing the preservative gas that arrested all decay. His gaze slid toward the rows of dull metal cylinders that held the strange stuff. They would not help him now. Only the tubes of oxygen would prolong his life—for a little while. And then would come death, and he would lie in this ocean tomb. Life above would go on. Marian—

Forget Marian! The marriage could never take place now. Forget Marian, with her soft, sweet lips, and her curling brown hair, and—and—

Dawson found that he was shaking. He crushed out the cigarette, trying to battle down the abysmal loneliness that rose within his mind. He went to the port and stared out through the thick, reinforced glass, a tall, lean figure with a brown, thin face that had grown very haggard in the last few hours.

It was so utterly black out there, so far removed from anything alive.

The lights flickered. The batteries were low. On an impulse Dawson turned a switch, plunging the bathysphere into darkness. His eyes strained through the sub-sea depths, searching for some hint of illumination. But there was nothing.

The oxygen was low. Dawson turned on the lights again and twisted a valve, bending to inhale the life-giving gas. He breathed too much, and felt a heady sense of exhilaration. . . .

Intoxication mounted to his brain. What was the good of dragging out the last piti-

• A COMPLETE SCIENTIFICION NOVEL •

able minutes of his existence? He wasn't living down here. He was waiting . . . Dawson, staggering with the effects of oxygen-drunkness, went to the next cylinder and turned it on. The gas hissed out. He went to the next, and the one after that. Turn them all on! One last gesture. . .

He did not know that he had released the preservative gas as well. He turned all the release-cocks he saw, toward the end scarcely conscious of what he was doing. But now there was a strange, sweetish odor in his nostrils, and he felt weak and giddy. The lights flickered again.

Marian . . . Mustn't think of her . . . Better open a port and let the sea rush in . . . Why wait for death? Let it come swiftly. . .

Dawson reeled across the floor of the bathysphere. His foot caught in a tangle of cordage, and he came down heavily, smashing his forehead against an oxygen tank. The metal floor rose to meet him.

He lifted a dazed hand, felt the lips of a raw wound cutting his skin to the bone, a gash that ran from brow to temple. Blood was hot on his fingers. He—he—

The walls of the bathysphere began to spin around slowly, and then increased their velocity till the ports were dark streaks. The light was flickering insanely. The hissing of escaping gas rose to a shrill scream. He was passing out—no, dying.

And now he could see nothing. The spinning walls merged into a chaos that slowly darkened. He felt that he was sinking into black velvet.

This was death. And after thirty hours of tortured imprisonment and stark loneliness, it was good to die. . .

He was not dead. The pain in his eyes told him that. He felt a sharp sense of disorientation, as though his brain moved in his skull. It was the same feeling that had come whenever he had been knocked out. Realization and memory came back.

He tried to open his eyes, and failed. They were gummed tightly together, and Dawson attempted to lift his hand to them. But a surge of tingling pain rushed through his arm as he moved.

He relaxed. Why try to awaken? It would be merely postponing the end. Better just to lie here in darkness, until he slipped back into unconsciousness.

And yet—yet there was something wrong. The light! It filtered between his closed eyelids, and, somehow, had the quality of moonlight. Then he felt very light blows upon his face, and the wetness of spray. It reminded him of rain beating upon him. He smelled the sea, and the tangy fresh air.

It was incredible, and so, too, was the distant booming and crashing that came to his ears. It sounded like surf breaking upon a beach. But how could all this be happening in a bathysphere under the Caribbean Sea?

It couldn't. Dawson moved his arm again, and lifted it, not without pain. His fingers were stiff, but he managed to pry open his eyelids. He was instantly blinded by a glare of intense light, and the lids snapped shut in automatic reaction.

The thought came to him that he had been rescued. Perhaps he lay in a hospital bed,



Fered Yoliath

and a nurse would come hurriedly at his call. He tried to cry out, and a shock of pain paralyzed his dry throat.

Dawson's eyes gradually accustomed themselves to the light as he blinked them. Distorted outlines swam into visibility. The glow was coming in through the ports of the bathysphere. It was for the most part in deep shadow, yet Dawson could see that the interior was chaos, with gas-cylinders and equipment tossed about helter-skelter. He tried to rise, but his left arm gave beneath his weight with a sickening lance of pain. It was broken, he realized.

He went unsteadily to the broken port, through which fresh air was gusting, and stared out. The scene was unfamiliar, and yet comforting. It was raining lightly, and moonlight was coming through dissipating clouds. The bathysphere rested on the sands of a beach.

Still puzzled, Dawson found a wrench and finished the task of smashing the glass of the port so that he could crawl through the aperture. The substance was unexpectedly friable, for some reason, and it was not long before Dawson emerged. He collapsed on the sand, gasping with exhaustion. He was weaker than he had realized.

WHAT had happened? On the beach fish were flopping about, and the bulk of a dead octopus lay not far away. Staring around at the silvery-green ocean, Dawson decided that a tidal wave, providential to him, had struck the shore, bearing the bathysphere with it. He turned his head to look at the sphere. Then Dawson went cold with amazement.

The globe was the same, and yet not the same. From outside the bathysphere was

now scarcely recognizable. It looked like a round boulder encrusted with sea-life. Molluscs clung to its sides, which were overgrown with weeds and polyps. And—good God!—coral! Dawson sprang up to examine his find. The coral had actually grown to the hull—and the sea polyp grows only over a long stretch of years, he knew. How long had the bathysphere been under water?

Dawson looked around. There was no clue. The beach seemed deserted. But to the left, southward, he saw a faint glow in the night sky. A village, perhaps, or a camp, though it did not look like firelight. He'd investigate. There would be food, liquor. Dawson felt the need for brandy. He was very weak. He began to walk southward.

The breakers boomed monotonously. The wind was warmer now. Dawson's hopes rose as the glow in the sky grew brighter. He'd have to send telegrams the moment he could. To Marian, first of all. She'd have worried. . . .

The ground rose. Dawson topped a rise and paused, staring down at the little city that lay beneath him. He blinked.

It was like a Hollywood studio set. The fragile, delicately-tinted buildings were small and delicate, looking as though a wind might blow them over. Yet they had weathered the storm that must have just passed. An incredible toy village!

There were towers and minarets and swooping ramps and arches, all in those delicate pastel tints, with streets and parks, the whole illuminated with a soft light that seemed to come from the substance of the city itself. And, strangely, the place seemed to be—under glass! No, not glass, but a shimmering, translucent hemisphere that glittered faintly in the moon-glow. The vast dome covered the entire city.

DAWSON shook off a queer sense of uneasiness. There were movie studios in Florida—and there were always experimental villages being built. A government project, perhaps, though he had not heard of it before. It had unusual lighting facilities—so what?

He went on, descending into the valley. The sea roared at his left, for the bowl was open in that direction. Hills bounded it on three sides. As he advanced he saw less and less of the city, for he lost his aerial view and saw only tall buildings towering above him. He was staggering with weakness, but kept on doggedly.

A park ringed the city. It was a blaze of coloriul blossoms, though Dawson could not smell the flowers' perfume. It was curious that they should be blooming at night. . . .

The air flickered before him. Suddenly he was standing before a shimmering, translucent veil in the air. That dome he had seen from above—he was at its edge. But it was not a barrier. Just light. He could step through it easily.

He made a move forward. Simultaneously there was a shrill, urgent cry, and a form hurled itself at Dawson. Taken off guard, one foot in the air, he fell back heavily, agony lancing through his broken arm. For a second he was blind with the pain.

Then he looked into the eyes of a girl, small and slim and lovely, with crisp golden hair curling about her face in an odd coil-feur. The cornflower-blue eyes were wide with fright.

"What the devil's the idea?" Dawson snapped.

"Are you a madman?" the girl whispered. "Do you—" She cast a glance at the shimmering wall of light and looked back at Dawson with a little gasp.

Her voice held shocked disbelief.

"You were going to touch—the Barrier!"

CHAPTER II

Shadow Over Utopia

UTTERLY amazed, Dawson remained flat on his back, looking up at the girl. Now he realized that there had been something strange about her words, a slurring of consonants and a prolongation of vowels that gave them a curious accent. Gutturals were softened, breathed out instead of being formed deep in the throat. And her clothes—

She was dressed in an almost skin-tight, elastic fabric of pale-blue material, covering her to wrists and ankles. On her feet were glass slippers. Perfectly transparent, they were flexible, and bent as the girl moved and rose from the ground.

Dawson also got up.

"What's the gag?" he asked quietly.

She frowned at him, puzzled.

"I do not understand—gag?" She made the gutturals sound like vowels. "Wait. The Barrier will pass in a sec."

Dawson followed her gaze. A shimmer of brighter opalescence rippled across the strange veil. And suddenly, the Barrier was gone. It vanished without trace.

"What was that?" Dawson asked. "And just where am I, lady?"

The cornflower-blue eyes examined him.

"The Barrier? It—it—why, you must know that! Everyone knows about the Barriers!" The girl's soft lips parted in surprise, showing small, perfect teeth.

"Yeah? Well, I don't. I'm a stranger here—"

"We make the Barrier whenever storms come," she explained. "It keeps the oorian from Dasonee—from hurting the city. And when the wind dies, we turn off the power, of course."

"Oorian?"

She made a wide gesture seaward.

"The big winds—the rain—"

"Oh. Hurricane. And this city's named Dasonee? I never heard of it."

The girl smiled.

"No. It isn't large. You must be from the great cities—or even from Europe. Those are strange clothes you wear." She touched Dawson's sleeve, and he flinched with pain. "Oh—your arm! It's hurt."

"Broken, I think. Listen, lady, is there a doctor in this burg?"

"Doctor . . . doctor? The medics will mend your arm for you. Come!" She led him forward into the park. "I am Bethya—Bethya Dorn."

"Let's get a taxi, Miss Dorn," Dawson said.

She paused and turned, confronting him. "Wait. Miss Dorn—and a while ago you called me *lady*. Why do you use those archaic terms? I don't understand . . ." She shrugged small shoulders. "I'll get you a car. I cannot go with you. I must tell Fered about the strange metal globe I saw on the beach."

"That's a bathysphere," Dawson said. "Even if it doesn't look like it. I just crawled out of the thing."

BETHYA Dorn's face went white. She looked at the man as though she had never seen him before.

"You—but it must be centuries old!"

"It looks like it, sure. But it was built just last year."



Steve Dawson

"When? What date?"

"April—"

"The year!"

"Nineteen-forty."

Bethya's reaction was astonishing. She glanced around hurriedly, almost furtively. No movement stirred in the glowing flower-gardens of the park.

"Who are you?" she said.

"Stephen Dawson. I—"

"Stephen Dawson . . . Come with me. Hurry!"

She began to pull the man forward. He resisted for a moment, a queer presentiment growing in his mind. Why had the girl asked him the year?

"Come! I must take you to Fered!"

"What year is this?" Dawson ventured.

Bethya hesitated, bit her lip, and finally answered, not without reluctance.

"The twenty-sixth century. Twenty-five thirty-three."

Dawson stood motionless. It was true,

then. He had not previously allowed himself even to guess at the incredible thing that might have happened. His strange awakening—the coral growth on the bathysphere—this amazing city—

"I—I need a drink," he said hoarsely. "I won't let myself believe—"

"Come! Fered will know—he'll help you. I do not understand how—but he will know. Your arm needs attention, too."

Dazedly Dawson let Bethya pull him through the park. They came out at the edge of a deserted road, paved with a shining white substance, that wound among the underbrush. Parked before them was the twenty-sixth century substitute for an automobile—it looked like an oval cup of gleaming plastic, not more than a dozen feet long, supported by three wheels.

The cushioned seats were arranged familiarly enough, but a single handle, ending in a small ball, comprised all the instruments. The edge of the car was so low that Dawson stepped over it easily at Bethya's hurried gesture.

She slipped in beside him. "Don't try to talk. Just relax, Stephen Dawson."

"Yeah . . . yeah." He obeyed, feeling the padded seat give beneath his weight. He leaned back, staring up. The same sky . . . Had the constellations changed in six hundred years? Not much, he thought. It was incredible. Well, he would soon know. He could see the city of Dasonoe as they drove through it.

But a plastic shell slid up and formed walls and roof about them, leaving only a small horizontal slit through which the girl peered.

DAWSON could see little. The vehicle turned, and there were flashing glimpses of other conveyances drifting along like clouds. He rested, closing his eyes. The sense of movement reminded him of days long past, when he and Marian had driven together through the Berkshire hills. . . .

Marian—dead six hundred years! Gone back to dust, resting in a grave he could never know now, never find. A sickening pang of loneliness shot through Dawson. The faint pastel glow that came through the window-slit, the silence of this alien city, were suddenly horrible to him. Never again to see the sun sinking behind the towers of New York, to hear the deafening roar of the subway and the rush of wind as trains passed. . . .

Marian—*dust!* All that had bound him to life, all his friends, his cities, his world, dissolved into gray dust. There was emptiness within Dawson's chest. He did not want to open his eyes.

The car stopped. Bethya hustled him out so quickly he had time for only a brief glance at a broad, winding street, lined with gardens and houses that there were symphonies in flowing curves and luminous, pastel tints. The vague light seemed to shimmer up from the paving itself. Dawson's head was throbbing. He was feverish. His arm ached.

"Come, Dawson. Fered will be back soon. He'll help you."

The door had slid up and vanished noiselessly as they reached it. Dawson had a brief impression of an oddly-furnished, large

room. Bethya helped him to a seat, where he relaxed. Hurriedly she went to a table, returning with what resembled a small metal egg.

She held this under Dawson's nose and broke it. A cloying, sweet perfume rushed into his nostrils. Unconsciousness took him instantly.

HE awoke, conscious instantly of a warm, pleasant lassitude. The dull, oppressive headache, and the pain, were gone. It was the relaxation that comes after a hot shower and a sound night's sleep. He lay quietly, remembering.

"Made the readings?" It was Bethya's soft voice. Dawson almost opened his eyes, but did not. On an impulse he remained unmoving. Perhaps he might learn something of interest—the girl's motive in keeping him hidden.

"It checked with mine," a man said. "In a few days I can turn in my report to the Council. The grant should be large—"

"And this man from the past—there'll be a grant for that, too. Enough, Ferred."

"Yes." The man's voice was low and pleasant. "We can marry then, Bethya. But I am not quite sure yet. Will have to question him. Though the interior of the bathysphere confirmed his story."

There was silence for a long time. At last Dawson groaned, rolled over, and sat up. His arm, he saw, was neatly bandaged and strapped into a light, rigid-metal frame that held it motionless.

The room in which he found himself was lighted by filtered sunlight that came, with a warm golden radiance, through circular-paned windows. Designs of translucent glass bricks were set here and there in the plastic walls. The floor of the room was a mosaic that yielded slightly to Dawson's feet when he swung his legs down from the couch on which he sat.

The furnishings were comfortable, yet definitely unusual. They were all swooping curves and graceful whorls, looking as though moulded out of one piece, tinted delicately in harmonizing colors. Couches and chairs had been built for comfort, Dawson saw. Seated together in one were Bethya and a man.

He was a slim, dark-haired young fellow, with a youthful round face and soft brown eyes. He wore tan shorts, a light sleeveless shirt, and sandals. That was all.

He stood up and came forward, bringing Dawson a little tray on which stood a glass of yellow fluid and what looked like a celluloid capsule.

"Stephen Dawson . . . I'm Ferred Yolath."

Dawson grinned feebly and extended his right hand.

"Glad to know you."

Not fully understanding the gesture, Ferred lifted his hands, palms outward, at shoulder height.

"Oh—I see. Our customary greeting—Well, before we talk, take this capsule and drink this nutros." He went on as Dawson obeyed. "You have been a long time without food. We've fed you—by injections—while you slept, nearly fourteen longsecs—"

"What?"

"I don't know how you reckoned time in your day, Dawson. It's mid-morning now." He took the empty glass and handed the tray to Bethya, who slid it into a wall compartment. "How do you feel?"

"All right," Dawson said. He still had that vague sense of disorientation, of instability, as though the Earth itself had vanished from beneath his feet. "Have I really slept for six hundred years?"

"Yes."

"That preservative gas in the bathysphere—I think I understand. It put me into a state of suspended animation, arrested all metabolism. It was supposed to 'freeze' deep-sea fish, but it worked on any sort of animal tissue, I guess. I'm living proof of that. Even my clothing's been preserved in pretty good shape."

"So are the metal parts of your garments. There was no water vapor in the bathysphere, and they didn't rust."

"It's harder for me to believe it than for you," Dawson said with a touch of wry humor. "Wait a minute," he went on as he remembered something. "Have you a mirror—a glass that reflects images?"

"We still use the word mirror," Ferred smiled, showing even white teeth. "Here." He turned to Bethya, who took a small shining disk from her garments and gave it to Dawson. The object was not an inch wide, he saw, and yet curved so that the reflection was magnified greatly without distortion. Of course Bethya would carry a mirror. The eternal feminine, even after six hundred years!

"Just before I passed out," Dawson said, "I remember cutting my forehead. Cut it to the bone, too. The wound's gone. No, there's still a scar."

"Scarcely noticeable," Ferred nodded. "Your metabolism was tremendously slow, but it went on nevertheless."

Somehow this latest discovery was the final touch that convinced Dawson. Simultaneously came a memory he did not want. Better to forget Marian now, if he could. At least, he should keep his thoughts away from those old days in New York. . . .

"I'm curious," he said. "This new world of yours—I want to know all about it."

"And we're curious about your world," Ferred said. "We have records, naturally, but we don't know how much exaggeration has crept in. A living fossil—" He laughed. "You're not insulted?"

"I've been called worse things." Dawson was beginning to like this easy-going youngster. "What can I tell you about the world I come from?"

"Nothing, yet. It's much better for you not to overwork your brain till you've recovered completely. Besides—"

BETHYA interrupted.

"The Council will question him, Ferred," she said.

"Yes. Of course. Meanwhile, there's no harm in telling you how we live, Dawson."

"All right. Thanks. What is this Council?"

"The Advisory Council. A group of men and women who administer the world government. New ones are chosen from time

to time as the old ones die. The greatest minds on Earth."

"It sounds a bit like Technocracy," Dawson said. "A world government? No, nations or states?"

"States, of course. But the Council lives in the capitol, here in America—in Washington."

"We used to have a President. He was elected—"

Fered nodded.

"So I've read. The members of the Council are elected, too, by state electoral votes, after they've proved the merits of their claims by some achievement. Even I might become—"

"No!" There was a hint of panic in Bethya's voice. "I don't like that, Fered, even though you're joking."

The youngster flashed a smile at her. "Little chance of my being elected. My vibratory-principle isn't good enough—"

"It might be," the girl whispered, her blue eyes wide. "Sometimes I'm afraid. And yet we can't afford to marry unless you get a grant."

Dawson shrugged.

"I don't understand."

"It's not complicated," Fered told him. "I've been working on a theoretical idea I've had for some time. The Council always encourages scientific work. They give grants—work-units—in return for any worthwhile ideas worked out and given to them."

"They keep the ideas themselves?"

"Of course not! We're not under a tyranny, Dawson. Any new scientific principles are worked out by the Council and given back to the world. Naturally the Council is better equipped to develop such ideas than—well, than I am."

Bethya broke in.

"Fered hasn't told you everything. If a man or woman is elected to the Council, he must dedicate his life to it. He can never see his friends or relatives again. He lives in Washington . . . Marriages are automatically dissolved if you're elected. It's like cutting all ties."

"That's no sacrifice," Fered said, his eyes glowing. "It takes all a man's energies to serve the world—it's the greatest honor one could want. But—" He looked at Bethya. "I won't be taken, darlya." The unfamiliar word was a caress. "And I can always refuse, you know."

DAWSON looked from one to the other of the pair. He was beginning to understand. The youngsters were in love, of course. For the rest—what was this Council? He didn't know, but despite Fered's reassuring words, he felt a vague sense of something wrong. He did not know just what. Perhaps Fered trusted the Council too much. It was like believing utterly in propaganda, never asking a question.

"Aren't there any revolutions?" Dawson asked. "No racial barriers? No social unrest?"

"Why, no. The Council rules. It's ruled for five hundred years, always beneficially. There's no reason for unrest. The system has stood the test of time, you see."

"All that power—power to rule the world

—in the hands of a few men?"

"Men and women. Six of them, always. They can be recalled by popular vote, though that's never happened, as far as I know."

"What's going to happen to me?" Dawson asked abruptly.

"Perhaps the Council will see you, or a group of scientists. You needn't worry. Everything will be made easy for you."

"Made easy for you." The sentence struck a dissonant chord in Dawson's mind. This seemed like a Utopia. Everything was easy—even adverse weather conditions were shut out by super-scientific barriers. A bit too easy, perhaps.

Fered was still talking.

"You'll be given time to adjust yourself to these new conditions. Given work for which you're fitted and which you like. Psychographs will take care of any mental kinks. Jumping six centuries may have upset you a bit! That's putting it quietly, I'd say."

Putting it—mildly? Despite the familiarity of the language, Dawson realized that there were many new colloquialisms he would have to learn.

"I'd like to see your city."

"Dasonce? All right. I'll drive you."

"What about reporting?" Bethya said.

"To the Council? Do it for me, darlya, will you? Grapas. Just about S'phen Dawson, though. I won't have the vibratory-principle papers finished till tomorrow."

BETHYA nodded, gave that odd salute to Dawson, and went out through a door that slid up as she approached.

"This is my home," Fered said. "You'll be my guest until requests come."

"Requests?"

"From the Council—as to your disposal."

That was an odd way to put it. Why not—orders? It would be the more logical word. Again Dawson sensed something vaguely amiss in this Utopian civilization, too tenuous for him to grasp or understand. It was like a shadow that fell momentarily over the bright, sunlit room.

"Your experiment is finished?" he asked, more through politeness than anything else.

"My part's done. That's why Bethya and I were on the beach last night. We were registering lightning-current on recorders. I wanted to check a minor point. The real work will be done by the Council. I'm not fitted for it. I've supplied the basic idea, and they'll work it out."

Dawson regarded him queerly.

"You're satisfied with that?" he snapped. "To let others finish your experiment?"

Fered looked at him.

"But I am finished! I've provided the idea!"

"This world *is* different," Dawson said. "You may not believe it, but in my day people got a kick—pleasure—out of finishing anything they started, even if it was just carving a toy sailboat."

The younger man frowned, puzzled.

"But—surely—it would have been enough to visualize the sailboat, and let the Council carry out the task. The Council is far wiser than any one man. Its members know what

should be best for the good of all."

"I suppose everyone thinks as you do, Fered?"

"Naturally."

"No experiment is ever finished?"

"Of course it's finished! By the Council! You don't understand—"

"I understand," Dawson said, rather breathlessly. "Let's not talk about it just now. You were going to take me for a drive."

He followed Fered toward the door, a sick, cold feeling in his stomach. Both the young man and Bethya seemed completely happy, satisfied with their lot. Was it actually possible that mankind had become a race of slaves, not realizing their servitude, worshipping the tyrants who ruled them?

No—his imagination was running riot, Dawson thought. This civilization seemed far better than the one he had left. But he knew, deep down within him, that something was wrong—very wrong.

This was not Utopia, after all.

CHAPTER III

The Discord

UNDER other circumstances, the drive through Dasonee might have been enjoyable. But Dawson was too busy searching for the flaw in the crystal. Under the warmth of a semi-tropical sun men and women in light garments strolled or rode in the three-wheeled cars—propelled, Fered said, by electro-magnetism.

"Doesn't anybody work?"

"Naturally they work. A few hours each day, longer if they wish. Machines toil for us, you see, Dawson. In our world the happiness of man is the most important thing."

Happiness—yes. Contentment, too. But there was none of the unrest that had existed in Dawson's time—nothing of the adventurous, daredevil spirit that sent men into the sky and beneath the sea and to the unexplored places beyond civilization.

Everything was made easy for these people. Scarcely ever did anything go wrong. Each man and woman had his appointed task, and was responsible to someone above him, and so it went up to the supreme authority of the Advisory Council. Yet there was a certain helplessness about the dwellers in Dasonee, somehow. They were—that was it—like children. Blind, unquestioning loyalty and obedience. So might a child feel toward its parents. But a child is eventually taught self-reliance, and there was none of that in Dasonee!

Dawson realized that this quality was an important one—perhaps the most important of all in the march of civilization. Fered had been willing to let the Council finish his experiment. He had lost all self-reliance. It had been weeded out of the race in six hundred years. So Dawson decided, after hours of observation and conversation with his guide.

Dasonee was a typical small city of the era. No servant problem—robot machinery was highly developed. Food? Scientific farming—cattle and sheep ranches, with ultra-modern facilities requiring only some

human superintendence. Fishing? You went out in specially-built, huge boats, pushed a few buttons, and metal nets came up with the catch, dumping it in the hold to be cleaned by machinery.

Social life? There were crêches for children, but these were not compulsory. Family life wasn't extinct. Amusements were greatly developed, both in the home and out. Vast theatres were subsidized by the government. At these one saw symphonies in light and color, ballets in which the dancers, with the aid of metal suits and magnetism, seemed to float in mid-air. And all of these amusements were surprisingly cheap. It took few work-units to live in this civilization, Dawson found.

Then came the accident. It happened on one of the higher ramps, a long descending curve that dropped down steeply to street level. Fered was driving the little car. Suddenly an oncoming vehicle loomed directly in their path. Fered swerved the car sharply to avoid a crash. Simultaneously there was a sharp, brittle snap, and the car jolted slightly.

It slid directly toward the slight railing that edged the ramp.

Whether or not the guard-barrier would hold, Dawson did not know. The wheels were locked, he realized, as Fered jerked the control-lever back and forth. But the youngster did not appear frightened. He touched a concealed knob, pulled at it—and it came off in his hand.

The car slid on.

Dawson looked sharply at Fered. The young man was frozen. He reached out with a helpless, fumbling motion—at air.

"Jump!" Dawson yelled. Fered didn't move. He had the expression of a frightened small child—uncomprehending.

There was little time to think. The car was almost at the rail, moving with a velocity that would have carried it through and into the abyss, to crash down into the street below. Dawson hurled himself against Fered, so that both their bodies smashed into the side of the car. Their combined weight lifted a wheel from the ground.

The little vehicle overbalanced, and fell over, capsizing. Fered made no effort to save himself, but Dawson managed to push him free.

They got up slowly. There was a queer expression on Fered's face.

"That—that never happened to me before," he said dazedly.

"Well, here comes help," Dawson grunted. A repair car was already swooping down upon them. Within a few moments it had towed the wrecked vehicle away, and a new one had arrived for them. Fered and Dawson got in, and they headed back home.

"Why didn't you jump, Fered?" Dawson said abruptly.

FERED shook his head.

"I don't know. It never happened to me before . . . I had the strangest feeling, as though the Earth had dropped from under me."

Of course. Fered had always been taught to depend upon others. Independence of thought was something that was lost to this

new world. The unexpected would find these people helpless—for they had lost their self-reliance. Without leaders—the leadership to which they had been conditioned for centuries—they would be sheep!

Back at Fered's home, they talked further. Dawson asked questions. "Have you achieved space travel yet?" he asked.

"No. Why should we? Though—wait a moment." Fered touched a few buttons on his television set, and watched the screen. A page of printed matter appeared on it. Dawson could not read it. It was English, but—
"Metrns dsndgfm spc strkr . . ."

Fered grinned.

"Simplified spelling—a form of shorthand used, particularly in libraries. You'll learn it eventually. A meteor was seen descending from space to strike Terra—no one knows just when, but it must have been around your time, Dawson. It proved to be a space ship, but it was empty. No one ever found out much about it. It's like that Arizona meteor crater, just a mystery."

"Yeah." Dawson was thinking of something else. "About your experiment, Fered. I used to be an amateur scientist, in my way. Though I suppose now—"

The young man seemed excited. "Why, you'll want to know about the vibratory principles. Let me tell you about my own—"

"Aren't you afraid to tell me?"

"Afraid? Why?" Fered asked, and Dawson did not press the subject. He had an idea. He listened intently as the other brought out papers and explained his ideas, and occasionally Dawson threw in carefully-planned comments. He made suggestions here and there, and spoke of his own college experiments. Fered listened with much attention. He began to ask questions about the laboratories of 1941, the great research bureaus, the private investigations of inventors.

"You know," he said at last, "I might have liked those days, Dawson. Something you said a while ago, that people liked finishing what they started—it must have been rather exciting."

"It was—is. Only you've never done it."

"No."

DAWSON waited a minute, and then said, with carefully-assumed casualness, "I suppose the Council would give you permission to go ahead with the experiment, if you asked?"

Fered looked almost guilty.

"But, Dawson, why should I? I could do nothing that the Council could not do much better. It would be selfish of me."

"Why? The Council could still have the plans, and you might just happen to stumble over something they'd miss. Why, look here, Fered—" Dawson pointed out an angle the other had apparently overlooked in his sketchy diagrams. "How would vibration affect molecular action? And quanta? Suppose—"

"The molecules would be—" Fered stopped. "This isn't my job!"

Dawson said nothing. Fered walked to the other end of the room and back. He glanced down at the diagrams, and remained

without moving for a full minute. And Dawson smiled.

Maybe it was merely throwing a monkey-wrench in the machinery. Perhaps it was that Dawson liked Fered, and felt sorry for the kid after seeing what had happened during the near-accident.

A little self-reliance wouldn't hurt Fered. If he worked on the experiment by himself, it would give him a feeling of independence, a realization that he wasn't just a cog in a machine. There was something unwholesome about the utter lack of self-reliance in Dawson.

Dawson dined that night with Fered and Bethya. He was beginning to like them both, but seeing them together brought back painful and poignant memories. The soft lighting of the room reminded him of a restaurant in Greenwich Village, where he had often taken Marian.

Abruptly he was struck with a sense of complete unreality.

Could it be true that he was sitting here alive, eating, drinking, in the twenty-sixth century, while everything he had ever known was merely—history? And Marian? She was not even history. It was horrible to think that she had passed without leaving the slightest trace on Earth. She was dust, and the food was dust, too, in Dawson's mouth.

HE fought down the unhealthy feeling. He'd have to keep his mind fully occupied . . .

"How's the experiment? Did you ask permission?"

"Yes." Fered smiled at Bethya's inquiring blond eyebrows. "I'm going to work it out myself, darlya. Or try to."

The girl shook her head, but before she could reply a bell rang softly. A panel opened in the table, and a small metal cylinder popped out before Fered. He picked it up, glancing at the others.

"Speaking of the subject, this must be the answer."

Dawson was pondering on the evolution of the colloquialism—"talk of the devil"—when Fered looked up, his eyes agleam.

"I've got permission!"

"You have?" Somehow Dawson felt a pang of disappointment. He had expected something else, though he did not know just what.

"Yes. They want me to come to Washington. They'll put an entire laboratory at my service. Darlya—" He sprang up, circled the table, and kissed Bethya enthusiastically. "This will mean a very large grant!"

The girl's eyes glistened.

"You're going to leave me?" she said.

"It's not for long. I'm handicapped a little here. I'll have so much equipment in Washington. And whenever I'm stuck, I can get help."

"Uh-huh," Dawson said.

Fered flushed. "I don't mean—well, it won't take long, anyway. They want you to come, too, Dawson. They sent you greetings and asked me to bring you."

"Nice of them. Suppose I don't go to the Council?" Dawson resented feeling like a cog in a well-oiled machine.

"Why, I imagine they'd send someone to you."

Very nice and friendly! A bit too much so. There seemed to be a dread of causing friction on the part of this mysterious Council.

It was, perhaps, a subconscious fear of meeting the Council, more than anything else, that made Dawson refuse to accompany Fered the next morning when he took his departure.

But apparently there were no ill effects, immediately, at least. Dawson continued to live in Fered's home, and Bethya took him in charge. She was a conscientious hostess, though it was plain that she missed Fered badly.

"We've never been separated before, Stephen. It's like losing him."

"He'll be back."

Bethya looked away.

"You don't understand. You don't know what it means—"

She stopped abruptly.

"There's the televisor. Just a minute."

They were in Fered's home. It was late evening. Dawson saw the televisor screen light up, and the figure of a uniformed man appear on it.

"Bethya Dorn?"

"Yes."

"When I called your home they told me I'd find you here. I'm representing the Council. Are you in charge of the man named Stephen Dawson?"

"He's right here with me."

"He is asked again to come to Washington. The Council is anxious to learn of the past from him. Will he come?"

"Ask him about Fered," Dawson said.

The official heard. "Fered Yolath has been made a member of the Council."

Briefly Bethya stood perfectly motionless. Then her hand flew up to her throat.

"Oh—no—" she cried.

Dawson was beside her. "What's all this?"

"Johan Burk of the Council died today," the man on the screen said. "He has been ill for some time. Instead of holding an election, the Council examined Fered Yolath and recognized his potentialities and achievement in a theory he presented. He was appointed a member."

Dawson's arm was around Bethya's shoulders, keeping her from falling.

"Will you come to Washington, Stephen Dawson? The Council invites you."

"Yes. I'll come. I'd like to meet—the Council!"

CHAPTER IV

The Council

BETHYA looked up with tearful eyes at Dawson.

"Fered would never have consented. We talked it over often. He said that if they elected him, he'd refuse. He loved me."

They were sitting in the robot-controlled Washington air-liner, a government-owned plane that was ready for them at the airport the next morning. Dawson had been amazed by the smallness of the wings and

the rocketing speed it developed. It would not take long to reach Washington, at this rate.

"We'll see Fered. If they'll let us."

"They'll let us."

Dawson nodded. The Council must be pretty sure of itself. But what on Earth could have changed Fered's mind so suddenly? He didn't know.

"It was good of you to come," Bethya said.

"Forget it. I'd have had to see the Council sometime."

"I feel better with you along, though. Not so lonely."

Dawson grinned. That, of course, was the motive behind his decision. He liked both Bethya and Fered, and had realized how helpless this child of a strangely decadent culture would be under the circumstances. Besides, he was curious.

A streak flashed by outside the plane, far above. Dawson pointed.

"What's that?"

"A stratoship."

"Moving fast."

"It doesn't use propellers. It's powered by the Earth's magnetic lines of force."

This was electro-magnetism with a vengeance. Dawson whistled. Good Lord! If mankind had discovered that power, why hadn't they used it in the construction of space ships? Another mystery to ponder!

He relaxed, examining his broken arm. It was healing surprisingly fast, and there was scarcely any pain. The brace still held it motionless.

The plane sped on. The countryside below was lovely, little changed from the scene Dawson remembered. The rolling hills, forests, and plains remained the same. Rivers and mountains had not altered in six hundred years. But the occasional cities were far different, delicate structures like toy villages.

There were many broad highways, with cars on them, and a surprising number of helicopter planes in the air. People had plenty of time to play. Perhaps too much time . . .

THEY did not touch New York, and Dawson was vaguely relieved at that. He found himself remembering the vast metropolis of his time, with the Empire State thrusting up gigantically against the blue sky, and snow crunching underfoot in Times Square. Always, tied up inextricably with those memories, was Marian, with her curling brown hair and her soft lips . . . *Dust!*

Dawson set his jaw and stared ahead. A city was coming into view ahead.

"Washington," Bethya said.

The man looked in vain for the Capitol's dome. Instead of the great city he remembered, he saw a park, with a number of smaller buildings surrounding what looked like a stone block. The towers and minarets of other towns were not here. There was only this great cube of undecorated stone towering above what had been Washington.

Its roof was a garden, however, lush with bright flowers, and in the exact center was a great elliptical dome of silvery metal. The contrast with the elfin cities Dawson had

seen was striking.

There was no need to touch the controls. Following its radio beam, handled by robot machinery, the plane slackened its flight and angled down smoothly. They were level with the roof of the great white cube. It towered above them as they sank down. They were descending into a small, cleared space of greensward.

There was not the slightest jolt as the plane landed and a door slid open. A man was standing outside, clad in a neat gray uniform of light material. His long face was pleasant enough, but in his belt Dawson saw a small, light pistol that looked like a toy.

There was no need for words.

There was a small arched door in the face of the cube that they approached. Again



Dawson stared at the motionless figures who ruled the Earth.

"Come in," the man smiled. "You're Stephen Dawson, of course. The Council is ready for you." He pointed back of him to where the vast cube rose. "It's not far. And you—" His eyes asked a question. Bethya got out of the plane.

"I want to see Fered Yolath."

"The new member of the Council? You're a relative? I'll have to ask. Usually the Council is completely isolated, you know, but in cases like these an exception is sometimes made. Come along."

The guide led the way. Bethya, in an instinctive, long-forgotten gesture, slipped her hand into Dawson's, and he tightened his grasp on it with a comforting squeeze.

Dawson was struck by the vastness of the structure. It was like the ramp of a cliff, as though he stood at the bottom of the Grand Canyon and stared up, craning his neck.

"Come along."

The door slid up. They entered a bare, stone-walled corridor. They walked forward perhaps two hundred feet, turned sharply to the left after their guide, and found themselves in a small room empty save for five chairs neatly ranged in a row.

"Sit down," the guide said genially. "I'll see if the Council will see you, girl. Your name is—"

She told him, and the man slipped away. For a space Bethya and Dawson sat motionless, staring at the blank wall ahead of them.

Suddenly it began to move. It slid upward smoothly, utterly without sound, and vanished. They looked down a long corridor. At its end was a stone wall, featureless.

The row of chairs began to slip forward, on a moving conveyor belt, Dawson thought.

"Do not be alarmed," a quiet voice from

nowhere announced. "You are entering the Council Room. The girl, Bethya Dorn, may see Fered Yolath, though we do not usually have contact with the outer world."

As they approached the end of the passage, the wall in which it ended also slid up. The row of chairs moved on, into a square, fairly large room that was empty save for a long, low bench set to face the moving chairs.

On this bench sat five men and a woman. Dawson scarcely realized that he had stopped moving. He was staring at the five motionless figures who ruled the Earth. No—it was the woman at whom he looked. And his breath caught sharply in his throat.

He stopped breathing. He had never thought he would see that face again—brown curling ringlets, and gray eyes cool under the sweeping lashes. . . .

He swallowed convulsively. It wasn't Marian. Like her, but not the same—not quite.

Yet it had been a shock. To see again that face so very much like Marian's. He looked more closely.

She was small and soft and fragile-looking, with a slightly tilted nose. She seemed very warmly human in the sleeveless light fabric garment she wore. Her eyes met Dawson, and he felt a cold, inexplicable shock ripple down his spine. He could not have told why.

It was Bethya's voice that brought him back.

"Fered!"

Dawson looked. The other men were normal specimens, two of them gray-haired, with smooth, beardless faces, two of them approaching middle age, and there was Fered, too, sealed at one end.

He wore the same sleeveless plain garment as the others.

"Yes, Bethya?" he said.

THE girl glanced at the others.

"May I speak?"

"Of course," said one of the older men. "Speak as you wish. The Council is for the help and guidance of humanity."

Reassured, Bethya looked again at Fered.

"Why did you do it?" she asked, her voice quite steady. "You said that if you were elected to the Council, you'd refuse."

Dawson waited for the answer. But, when it came, he was shocked nevertheless.

"Perhaps I owe you an explanation," Fered said. "This may be difficult for you to understand, but I have learned a great deal in the last twenty-four longsees. I told the Council of my theory, and they thought more of it, even, than I did. Johan Burk was dying, and I was offered his place."

"You said—"

"At first I refused. But many things were revealed to me. Knowledge given only to the Council, passed down from old members to new. Knowledge that showed me why I must sacrifice my life for humanity by serving in the Council. I said you might not understand this, Bethya, but you must try."

There was silence. The girl's head was bent. Dawson felt a sharp pang of pity for her. How could Fered sit there unmoving

while Bethya was trying to repress her tears?

"Do not think that this was easy," the man said. "I loved you very much. I still do. Yet I have learned a greater wisdom. It is for the benefit and future of mankind that I must give up you and all the other things that were part of my life."

Bethya lifted her head and looked at Fered.

"No, you don't love me. I can tell that by your voice. What has changed you?"

The Council sat like a row of stone statues.

"Knowledge has changed me," Fered said. "I can see now that I was like a child before. I have learned so much . . . That is why no man has ever refused to serve the race by becoming a member of the Council. You must believe that I have my reasons, and that they are good ones."

"And I—"

"You must forget me. Move from Dawson, if you wish. Work-units will be provided for your convenience. Think of me as one dead, and marry someone else, when you can do so."

A hurt, pitiful little cry came from Bethya's lips. She said nothing more.

She kept staring at Fered, all her soul in her eyes.

One of the older men tapped Dawson's arm.

"You are Stephen Dawson?"

"Yes."

"May we ask you some questions?"

"You're very polite," Dawson said, feeling a strong dislike for these six motionless figures.

They seemed utterly without emotion—and Fered had become one of them.

Irony seemed wasted on the Council.

"Yes," Dawson said, and waited.

"Not here. We have machines—psychographs and others—that will save much labor. You will not be harmed or hurt."

"All right," Dawson said.

"The guide will take you—"

"Wait."

IT was the woman member of the Council who spoke. She stood up, her gray eyes fixed on Dawson's.

"Wait. I wish to superintend his examination myself."

"Very well."

The woman walked toward Dawson, who rose.

"I am Laurena San," she said impersonally. "Come."

She went toward the wall, and a concealed door within it slid up. Dawson cast a reassuring glance back at Bethya, but the girl did not look up.

He followed Laurena San.

She was completely detached, cool and aloof. Yet always, during the hours that followed, he was conscious of her resemblance to Marian. Always when her eyes met his there was that cool, dispassionate appraisal.

Yet under it, he sensed something else—a very vague and inexplicable thrill of strangeness.

They went from laboratory to laboratory, where trained experts in psychology and other scientists manipulated machines that examined Dawson. They tested him physically—his blood-pressure, his pulse, his metabolism. They probed his mind, using a curious form of word-association test. They X-rayed him and literally put him through the wringer.

They turned a ray upon his wounded arm which, they said, would speed up the healing process. And always Laurena San kept at his side.

Dawson was uneasily conscious of her presence. For he was pretending. Some impulse he could not define told him to "play possum" — to pretend a stupidity which might disarm suspicion. Why he sensed danger he could not guess, but he felt its nearness nevertheless. By playing dumb he might lead his enemies into underestimating him.

His enemies? Were the members of the Council inimical? That remained to be seen. At last the examination was finished, and he was taken back into the presence of the Council. Bethya was no longer in the room. Laurena took her place on the bench beside the others.

One of the older men took command.

"Stephen Dawson," he began, "you have been found healthy in body and mind. You are not fitted for other than work below the thirty-level—that is, nothing that requires concentration and quick thinking is open to you."

Dawson suppressed a grin. So his stratagem had worked.

"After you have acquainted yourself with this civilization, you may choose what work you wish, within certain limits. It will not be arduous. Have you anything to ask?"

"I'd like to go back to Dasonee for a while."

"Very well. The girl Bethya Dorn is in the robot plane. Join her, and you will both be returned to Dasonee. You may have the former home of Fered Yolath for your own. A guide will be appointed to aid and instruct you."

That was all. The row of chairs slid backward, out of the chamber, and the wall descended, blotting out the Council.

A GAIN Dawson found himself in the little room of stone. Suddenly, as he started to get up, a panel moved and opened. Laurena San came in.

Dawson was on his feet, a poignant stab of pain suddenly rising deep within him. *Dust. . . .*

Laurena San paused a foot from the man. "Do you know why I offered to superintend your tests?" she said, her voice low.

"No."

"Because—" She hesitated. "Because there was something in your eyes when you first looked at me. Something I do not know. What was it?"

Dawson froze. It was like probing in a wound.

"Surprise, I suppose," he said carelessly. "You're very lovely."

There was indecision in the woman's manner.

"No. It was something else than that. Yet—"

She turned to the door. "The plane is ready for you. Go. I do not know why I am doing this. For you are not as stupid as you pretended to be under the tests, Stephen Dawson. No! And I should tell the others of your trickery. . . ."

"I—"

"Go."

Dawson obeyed. He turned in the corridor, to catch a brief glimpse of level gray eyes in a small, heart-shaped face surrounded by curling brown ringlets. Laurena's lips were parted. She lifted one hand—

The panel closed. Dawson, breathing unevenly, walked along the passage toward the small rectangle of daylight he could see far away.

CHAPTER V

Revolt!

TIME passed slowly in Dasonee. The unexpected never happened. Everything was easy for Dawson, and, to all appearances, he settled down in Fered's former home and began to adjust himself to the new life. But he was restless and uneasy. He asked innumerable questions of his tutor, taking care to keep up the pretense of stupidity that he had begun at the Capitol.

He spent much time with Bethya, almost automatically assuming an attitude of protection toward the girl, and she clung to him, perhaps sensing in him a strength that had been bred out of the race for centuries. Gradually, with a definite plan, Dawson began to acquire the reputation of a wastrel.

He spent his days and many of his nights enjoying the various amusements of Dasonee—and there were many. Horses were bred for speed and beauty, and the ancient art of hawking had come back. Dawson became expert at the art of falconry. In this Bethya could help him, for her work was the attendance of an aviary, filled with an amazing assortment of birds, some familiar to Dawson—redbreasts, herons, pigeons—and others quite new, including a sort of tiny penguin popular as a pet.

Bethya gave him a falcon of a newly developed breed, trained to long flights, with certain novel traits that Dawson found interesting. It could sing like a canary, for one thing. He told Bethya of the birds of his day, and, to her surprise, informed her that pigeons had once been used for carrying messages, that pelicans had been used to capture fish, and other stray bits of "history."

All the pleasures of Dasonee were put at his disposal, and he seemed to have an unlimited number of work-units at his command. Behind this he sensed a motive. It was like being fed an opiate, kept so contented that he would not trouble to think. But Dawson was not a product of the twenty-sixth century. He was an anachronism—and therefore dangerous.

Dining one night at a roof-garden, in a private, glass-walled room that permitted an excellent view of the floor show, a kaleido-

scope of rainbow colors and shifting geometrical patterns, Dawson watched Bethya closely. He had adopted the new clothing, shorts and sleeveless shirt and flexiglass sandals, and looked healthy again, his broken arm nearly healed.

"You've been wanting to talk to me, Bethya," he said at last. "What is it?"

SHE looked around and then met his eyes. "I'd be afraid to talk to anyone else, but you're—you're strong, S'ephen. Not like these others. Though I'm afraid not even you can help me."

Dawson stretched luxuriously, a lean, hard figure, tanned and dangerous-looking. Bethya watched him.

"It's about Fered, isn't it?"

"Yes," the girl said. "He doesn't belong in the Council. I—I want him back, S'ephen."

"You talked to him."

"That wasn't Fered, not the Fered I knew."

Dawson's eyes narrowed.

"Right. I don't believe his story of some secret wisdom the Council told him that changed his whole character." There was another thing, too, which Dawson did not mention. Fered would not have been deceived by Dawson's pretense of stupidity, after the conversations the two men had had together. Had the youngster forgotten? Ridiculous, unless—

"These psychographs," he said. "Are there any machines like that that could change a man's mind?"

Bethya frowned.

"I'd thought of that. I've suspected something's been done to Fered—something to change his psyche—"

"Destroy all emotion, eh? Turn him into a coldly logical machine?"

"Can't you help me save him, S'ephen?" the girl whispered.

"I don't know. It's a tough job—"

"You're not like other men."

Dawson knew that this was true.

"Your race has become decadent, I think," he said. "Six hundred years doesn't seem a long time in which to work such a complete change, but with guidance and careful conditioning it might be possible. The race has stagnated. And I think the Council encourages that."

He went off at an angle.

"There's something wrong about the Council. I can't put my finger on it, but somehow the whole set-up doesn't ring true to me. You can't sense it, Bethya, because you've been trained along different lines, like the rest of the world. But—"

"Go on!" The girl's blue eyes were wide.

Dawson toyed with his glass.

"I don't know, really. The Council members seem somehow without emotion. The Capitol itself—just a block of stone. That's funny, when you remember how lovely all the other cities are. Again, space-travel could be mastered, with the principles at your command. Yet that's never been tried. The Council holds all science in its grasp. It's an autocracy."

"It's benevolent."

"Superficially, yes. The people are kept drugged with pleasure so they don't realize

that something's wrong. They are free to do whatever they want. But what could threaten the Council's power?"

BETHYA didn't answer, and Dawson went on. "Science. New discoveries, new weapons. And people have been conditioned to turn over all new ideas to the Council, without troubling to work them out themselves. The race is in a backwash. It's stagnated, like a herd of sheep in a pasture. The sheep may be grateful to the shepherd for giving them good grass—but they'll be muton eventually."

"Five hundred years the Council has ruled—"

"I don't understand it all. This electorate business, for example. The Council members are elected—good enough. But why are they isolated from the world afterward? The Council's clever—damnable so. Look at Fered. He stepped on their toes, but there wasn't any trouble about it. They made everything easy for him, gave him just what he wanted. Maybe that's the idea—giving people what they want, so they won't become difficult."

He gestured around at the lovely city spread beneath them.

"It's beautiful and it's stagnant. All initiative has been bred out of the race. There's no need for strength or self-reliance. If anything goes wrong, just run to Papa. Papa's the Council. And that's the nub of the mystery."

"I'd like to smash the Council," Bethya said with sudden anger, and Dawson looked at her, startled.

"You would? So . . . I guess initiative hasn't been bred out entirely. Once the basic human emotions are touched—Personally, I think it'd be the best thing to cure humanity. Jolt it out of its rut. Depose the Council. People would be helpless for a while, and then learn to think for themselves. Progress would begin again." He tugged at his ear-lobe. "I'm afraid, Bethya. There is something wrong about the Council. Remember what I said about sheep—and muton?"

There was a little silence. At last Dawson shrugged.

"I've been playing dumb. I've done that before, once when I helped a revolution down in South America—but there's no parallel. I don't like the idea of relapsing into a stupor, like the rest of the race. Still, you can't fight a world, and the Council owns all science, all weapons."

"Not all," Bethya said. "Fered's papers—I have a copy of them. I spilled water on the originals and made a new copy for him. I still have the first ones."

Bethya's hand gripped Dawson's. "Can't you do something, S'ephen? I'll help all I can. I want Fered back, if it means wrecking the Council!"

So like a woman! Civilization, the world itself, meant nothing compared to getting the man she wanted. And yet—might this not be a good idea? There was a stir of excitement rising within Dawson.

"It's not as fantastic as I first thought," he said slowly. "The Council doesn't expect attack. A sudden *coup d'etat* might succeed.

Taking them by surprise, capturing them before they have a chance to use defenses—good Lord! It'd certainly jolt the race out of its stagnation." And now his eyes were ablaze.

"Fered told me something of his theory—"

"He told me something, too. The vibratory principle. If we can secretly construct a weapon and make a few converts, it wouldn't be impossible."

Dawson grinned. "About these plans now. . . ."

AND so it was begun. In the days that followed, the pair of conspirators worked fast and secretly. Dawson's pretense of being a thoughtless wastrel helped. On the surface, he continued his reckless search for pleasure, and was careful to spend some time each day with his tutor, who might, he thought, be in touch with the Council. But he and Bethya found plenty of time to work together.

It was surprisingly easy, provided one used a certain amount of care. Conspiracy was a word forgotten. There was no need to guard against it. And, inevitably, the pair made converts. Bethya chose them painstakingly, and Dawson, more by strength of will than sound argument, made them his supporters. In the very nature of this civilization, men were ready to turn to stronger men for guidance.

A few score men were all Dawson needed and wanted. More might mean betrayal. But among these adherents were several scientists, and Dawson needed them.

Though, whenever they were stumped, they always ran to Dawson for aid. Gradually he began to instill some semblance of self-reliance into them, using elementary psychology, giving them jobs to do and making sure they finished them. It was curious to see the new pride and pleasure they had after completing their tasks.

Sometimes Dawson wondered why he was doing this. He liked both Bethya and Fered, and wanted to help them. But, more than that, he sensed a deadly danger in the existence of the Council. Try as he might, he could never solve the deep mystery that surrounded it. Yet he knew, with a definite certainty, that the human race was held in silken, perhaps unbreakable fetters, subtly led on to decadence and doom.

Why?

No one could tell him. And how could a tyranny, based on an electorate, maintain itself? It was against all principles of political logic, for the elections, as far as Dawson could discover, were perfectly fair and free from corruption. A machine-made, psychic change in character after joining the Council was the only solution. Yet it failed to explain too many things.

His arm was fully healed now, and Dawson worked with electric urgency, watching the characters of his adherents grow and develop under his tutelage. Bethya was much changed. Her chin was firmer, the blue eyes direct and level, her voice brisker. She was getting back the heritage of the race—and so were the others.

Yet it was hard at first. Fered's papers showed the way, but the instinct of research

and inquiry was hard to recapture. Dawson had to show every step of the way. He guided; the others followed efficiently once he had led them on a bit.

"How will this ray affect molecular structure?" he asked one scientist.

"It might cause stasis."

"Arrested motion? You mean it could freeze people into statues?"

"I hadn't thought of that, but you're right, of course, Dawson. Yes. The molecular motion would be halted, with the same effect as that caused by absolute zero temperature, and all movement would cease. Yes, people could be paralyzed."

"Work it out. In detail!"

And the scientists could do that, once Dawson had given orders. Theory turned into practice, and practice into a concrete, three-dimensional ray-projector. Working on a carrier beam principle, it was capable of transmitting vibration for a distance of half a mile, instantly arresting anything in its path. Its focus could be made wide or narrow, and could, if necessary, embrace the whole great cube of the Capitol building in its sweep.

The conspirators met in a deserted warehouse on the outskirts of Dasonce. It didn't look like a warehouse, being a dome of plastic, tinted in blue and soft green. There was little fear of discovery, though Dawson took all possible precautions, including posting guards outside. The group met secretly, always at a different time, to disarm suspicion.

Eventually two planes were readied, one of them equipped with the ray-projector. This was to hover over the Capitol, keeping the beam in operation, while from the other, men in protective armor would land to take over.

"No need for any killing," Dawson said. "We'll take the members of the Council into protective custody. If there's something wrong with their minds, we want to cure them."

Bethya nodded, but there was a new ruthlessness in her blue eyes. It was Fered she cared about, no other.

Dawson, at the last moment, felt a twinge of compunction. After all, he was a stranger in this world. Had he the right to upset the apple-cart without knowing more about the situation? It was rather late for such thoughts, but Dawson nevertheless determined on a bold move.

"I'm going to Washington," he told the group of conspirators as they listened in the deserted warehouse one night. "I'm going to ask questions and, maybe, deliver an ultimatum."

BETHYA objected, but Dawson was firm. It was a big monkey-wrench he was throwing into the machinery, and he wanted to be quite certain before he upset a world. Good Lord! He'd never realized it would be so easy. That was the result of breeding alertness out of a race. . . .

"Everything's ready for the attack. It will take place exactly at noon tomorrow. Remember my instructions. Fly high till you reach Washington, then turn on the ray and drop. The men in protective suits will enter the Capitol and take over. Not until you're sure of safety will you turn off the ray."

"What about you?" someone asked. "You'll be in it—"

"The ray doesn't kill. It just paralyzes. I'll recover with the others. And then we can learn the truth about the Council. But keep your televisions tuned in. If I don't call you from Washington before noon, attack."

He let his gaze slide across the row of faces before him. They were changed, stronger now after weeks of tutelage. The softness was no longer so apparent. Dawson smiled grimly, lifted his hand in the Dasonee salute, and said, "Happy landings." He went out, Bethya with him. But in the shadows he stopped her.

"I'll leave you here. You're to remain in Dasonee, remember."

"I don't want—"

Dawson's eyes bored into the girl's.

"You're staying. Hear me?"

"I—yes. You know best, of course. You'll bring back Fered, Stephen?"

Dawson nodded, squeezed Bethya's arm, and turned away, walking swiftly toward the airport. Excitement was tense within him. By noon tomorrow the mystery of the Council would be solved!

CHAPTER VI

Disaster

DAWSON timed his arrival well. He did not go to Washington immediately, but, on an impulse, headed for New York. The city had changed unrecognizably. The stiff skyscrapers had given place to towering, graceful spires rising from a labyrinth of domes and curves and arches. All the structures were lit by the glow that came from the plastic structure of the city itself.

The outline of the Island had not changed. Dawson could trace the Hudson, the East River, the Harlem River, but they were fringed with parks, and were no longer the dirty, roiling streams he remembered. Bridges spanned them, slender arches that seemed too light to support their own weight. But tremendous tensile strength held them safely.

New York was a riot of color. Yet only the traditional name remained unchanged. Greenwich Village, Times Square, Central Park—they were all gone. Dawson felt a horrible loneliness as he hovered above the city, and for a second had an insane impulse to send the plane diving down to destruction.

The feeling passed, and he went on, pausing sometimes over cities, or to examine the countryside in the bright moonlight. Once more he was struck by the Utopianism of this world. But it was only superficial, he knew. Over all brooded the mysterious shadow of the Council.

The hours dragged past. He set down the plane in a valley of what had been the Alleghenies and got out, drinking from a trickling rivulet that ran near by. He walked about, feeling the dewy grass cool on his bare ankles.

He stopped and let a handful of dirt trickle through his fingers. The Earth had not changed. But the people who dwelt upon

it changed, and died, and went back into the dust, and were forgotten. As Marian had been forgotten, except by him.

Strangely he could not remember the lovely, futuristic New York he had just seen. He could not picture it. Instead he recalled how the lake in Central Park had looked at twilight, with the skyscrapers clifflike to the south, and a girl's face turned up to the sky as she watched the sunset. Sick with hopeless longing, Dawson dropped upon the grass and buried his face in his hands.

THE sun was high when Stephen Dawson reached Washington. He set down his plane in the stretch of greensward he remembered, and got out, looking up at the great block of stone that was the Capitol. His face was grim and harsh.

The chief problem was—what to ask the Council? Demand a solution of the mystery; that was easy to say. But, after all, just what was the mystery? A false note here, a suspicion there, all building up to a convincing whole; yet there was actually nothing definite. For all Dawson knew, the whole set-up might be on the level. And, somehow, that was the most sinister touch of all. For he sensed, quite certainly, that something was terribly wrong with this world.

The same guide he had met before came to meet him.

"You were not summoned . . . Oh, you're—let's see—Stephen Dawson."

"Tell the Council I want an audience," Dawson said.

The other shrugged.

"It's unprecedented. An exception was made when you first came, Dawson. But I'll ask. Come along."

Presently Dawson was brought before the Council. The panel closed behind him.

Nothing was altered. Five men and a woman—Laurena San—sat on the low bench, facing him. Involuntarily Dawson felt his heart contract at sight of the heart-shaped face, the cool gray eyes.

Fered was there, too, his face without expression.

"How can we help you, Stephen Dawson?" one of the older men said.

"I'd like to ask a few questions."

There was silence.

"It was at the request of Laurena San that we consented to see you," the man said, after a pause. "But we serve the world, and have little time to spare. You must be brief."

Dawson nodded, stealing a glance at his wrist-chronometer. He looked up in time to see Laurena's gaze fixed upon him intently. A wave of uneasiness touched him. There was something definitely sinister about this barren, ascetic room.

"You needn't answer," he said, "and in your place, I know I wouldn't."

"Why should we not answer your questions?"

"Why should you? What do you care about one man when you rule the world?"

"We do not rule. We administer. And every individual on Earth deserves happiness."

Dawson let his gaze move along the row of stolid, impassive faces. He stopped at Fered.

"First—have you altered Fered Yolath's mind or character?"

"You mean by mechanical means, don't you? No. He has acquired certain knowledge not given to ordinary men. His whole attitude toward life was altered by this new understanding."

"That is true," Fered said quietly, his voice calm.

Something drew Dawson's eyes to Laurena's lovely face. In it he seemed to sense puzzlement, and a very vague sort of amused mockery. Briefly it seemed to him that he confronted six blind masks, impassive and cryptic.

"Is that why members of the Council are so different from other men?"

"We cannot take part in ordinary life and administer it, too."

Dawson made a gesture.

"This room—the whole Capitol—you're ascetics. Is it because beauty no longer means anything to you? Or is it because you don't wish to arouse envy?"

Laurena San spoke.

"Perhaps it is that we now have a different concept of beauty. As for envy, why should anyone envy us? There is no man or woman on Earth who is forbidden to become a member of the Council."

And that, of course, was true. That damnable electorate! It was the weakest link in Dawson's chain of evidence. He went on grimly.

"Humanity has changed since my time. You, the Council, have lost touch entirely with it, I think. Man has become degenerate."

Laurena's expression was grave.

"No, you are wrong. Mentally and physically man is nearly perfect."

"He has lost initiative."

Suddenly Dawson was conscious of an inexplicable tension in the air. Yet the six faces before him did not change. Laurena broke the silence.

"To you, from the twentieth century, initiative must seem very important," she said coolly. "Yet it is an acquired trait. Man lost his appendix and his wisdom teeth when they were no longer needed. Since primeval times, the law has been that of the survival of the fittest. Man was essentially hedonistic. Self-preservation and preservation of the species were the great driving instincts. Unless one had initiative—which is a form of selfishness—he did not survive. Do you agree?"

DAWSON was forced to nod.
"So. Now, today, we have an almost perfect administration, socially and politically. Six specialized humans sacrifice themselves, as you would say, to serve the race. In these six all the necessary traits are highly developed. Mankind does not need them any more. There is no longer a battle for survival. There is no crime, no jealousy, no greed—happiness is everyone's prerogative. Thus initiative became unnecessary, and died out of the race. In your time the appendix was a useless organ, yet many died because of its survival. If initiative existed today—"

She did not finish, there was no need. The

parallel was obvious. And it was all damnable convincing.

He went off on a tangent.

"Why hasn't space-travel been developed?"

"We do not need it for our happiness."

"You don't have any explorers, either. You're stagnant. You can't realize the thrill of going somewhere no one else has ever been—into an ocean deep, up a Himalayan peak, or into space."

"That is merely compensation," Laurena argued, "the result of a psychic unbalance, an inferiority complex. Self-glorification is not needed today. The individual is healthy mentally as well as physically."

Dawson blinked, feeling like an insect under a microscope.

"Sure," he said. "You can rationalize anything. Love is just a glandular unbalance—"

The woman's lips parted.

"Love—" she murmured, frowning.

"Maybe that's one of the things you forgot when you joined the Council. But it's a primal impulse, and so is initiative. What's wrong with self-preservation?"

"It is not necessary today."

"And man has degenerated," Dawson argued. "The human race is a race of fighters, always has been. You can't breed out a heritage that goes back to beyond the Jurassic without causing weakness. Something's lacking in men today—"

"What do you wish?" Laurena said suddenly.

A wry, ironic amusement at his own audacity took hold of Dawson as he stood up, facing the Council.

"I want you to abdicate—resign, if you prefer."

There was silence. And it struck Dawson as rather shockingly strange that no one laughed.

Laurena rose, without a word, and went out through a panel that opened at her approach.

"You ask us to send man back five hundred years, into a life-pattern for which he is no longer suited?" one of the older men said.

GOOD Lord! Was this fantastic group seriously considering his demand? He felt a shock of amazed incredulity.

"Man can adapt himself," he pursued. "He can get back his initiative—"

"And many would die. It is not for the best that this be done. We must refuse. And, for your own safety, we must put you under observation until you have achieved happiness. We shall do all that we can to help you."

"I don't want opiates," Dawson snapped. He saw that Laurena was coming back. She took her place quietly on the bench, watching him with odd intentness.

"You must understand our situation," the Council member went on. "You are a false note in this world of ours. No trouble has arisen for years. We want you to adjust yourself."

Dawson looked at his chronometer.

"That's your last word?"

"What do you mean?"

"I mean that this is an ultimatum. I give you just thirty secs to change your minds."

The man started to speak, but Laurena

held up her hand, halting him. She looked at Dawson, and again he sensed the subtle mockery in her gray eyes. She said nothing to him.

There was silence, filling the room like water, motionless and oppressive. Dawson could feel the secs sliding past. It would be high noon very soon now—deadline. The planes would attack.

He sat down and waited, folding his arms.

There was no sound. The eyes of the Council were impassive, inscrutable. They seemed to have taken their cue from Laurena.

THEN, without warning, it happened.

A tingling shock rippled through every cell of Dawson's body. Abruptly the life seemed to be draining from him. The movement of air through his nostrils ceased. He had stopped breathing.

Nothing else was changed. The Council sat motionless. They were frozen into stasis by the ray that was flooding the Capitol building. The molecular movement of their bodies was halted.

It was like paralysis.

Dawson tried to move, and found that he could not. He tried to look away from Laurena's face, and that, too, was impossible. There was no means of judging time. He could only sit there, helpless, realizing that this identical thing must have happened to everyone within reach of the vibratory ray.

He felt triumph. *Coup d'etat*—and, soon, *coup de grace*!

It seemed to him that he heard footsteps approaching. No, that was illusion. His senses were no longer working. He was numb, deaf—though not blind. Or perhaps his brain simply retained the last impression the optic nerves had sent up to it.

Mentally he pictured the scene above. One of the planes was landing on the cube's roof, disgorging men in protective armor. They would find their way down, disarm and capture the Council—though no armament was apparent on those lightly-clad bodies. Then the ray would be shut off. . . .

Abruptly the paralysis was gone. Dawson did not entirely realize it at first. When he did, he stood up, his body tingling. Yet no member of the Council had moved. He felt uneasiness, the nearness of danger.

A voice from nowhere spoke in rapid, clicking audio-shorthand. Dawson could not understand. He looked around, searching for the armored men who should be here now.

The voice stopped.

"The attacking planes have been destroyed, Stephen Dawson," Laurena said lightly.

Startled, Dawson could not realize the significance of what she had said. He stared at her, seeing no hint of emotion in the small, regular features, the level gray eyes.

"Sit down," she said. And Dawson obeyed, every sense alert, feeling trapped and helpless.

"You were wrong to underestimate the intelligence of the Council," Laurena went on quietly. "When you asked us to—abdicate—I realized that you must have some weapon, for you are not a fool, regardless

of what the psychographs said. I left the room to set certain robot machinery into operation. When your ray bathed the Capitol and paralyzed it, the robot guns sent forth radio-propelled torpedoes, aerial-torps, which were attracted by the electrical and magnetic apparatus in your planes overhead. Those planes were destroyed, and the ray ceased to operate."

"My—my men—" Dawson whispered, his throat dry and tight.

"All dead. And now we have some questions to ask."

"Questions!" The man almost laughed in bitter mockery. "There must be a wall around!"

"I do not understand."

"Stand me up against it—shoot me. It's the unusual thing, isn't it?"

"Not in this day," Laurena told him. "You are a false note in our world, but a false note may be tuned aright. You will be taken to the laboratories again and re-tested. First there will be some questioning. But you will not be killed."

WAS Dawson wrong in thinking that a ripple of surprise passed through the Council—even Fered? He could not be sure. However, no one spoke as Laurena went on. "Explain your motives," she demanded.

Dawson glanced at Fered. He was remembering Bethya Dorn, back in Dasonee, waiting for the outcome of the abortive attack. At all costs, he'd have to protect her—for, somehow, he knew that not even Fered would show the girl mercy if he betrayed her part in the conspiracy. She might not be murdered, but the subtle psychology of the Council was more deadly than poisoned fangs.

He sat down, assuming a sullen air and crossing his arms.

"All right. This isn't my world. Where I come from, people fought. I've always had to fight for what I wanted."

"There was no need, here."

He grinned savagely.

"No? You don't know what it means to have power—power of life and death! Hell, of course you do!"

"We serve," Laurena said simply.

"Well, so what? I've always wanted to be top dog. Never had a chance in my own time. When I saw this race of weaklings, I figured I could make myself the big shot—the ruler." He went on, trying hard to make the Council believe him. And, very gradually, he sensed that he was succeeding.

"Call it a psychic unbalance," he said angrily. "Or an inferiority complex. I'm not one of these sheep you rule."

"Who were your assistants—your helpers?"

Dawson named them frankly, taking care to mention only those who had died in the destroyed planes.

"There were no others?"

"No. I didn't think I'd need an army."

"Not even an army could conquer the Capitol," Laurena told him. "Very well. You will go through the lab tests—"

"You'll let me live?" In spite of himself,

Dawson let amazement creep into his voice.

"We must have no discords. The whole world knows about you, that you came from

the past. If you died, many would ask questions, and their happiness would be menaced. As yet, you cannot be allowed to mingle with others. You will be our guest here, incommunicado, until such time as your mental cure is complete. Then you will be released."

Dawson shivered. There was menace in those words. *Mental cure* . . . He did not fear guns or fists or death-rays, but he did fear the unknown powers of this world. Looking at Fered's blank, expressionless face, he remembered how the youngster had changed.

A "guest" of the Council! And would he, too—change?

CHAPTER VII

Dangerous Captive

THEN began a strange time for Dawson. He was never harmed, and everything was done for his comfort. But he was a prisoner within the vast block of the Capitol, never allowed to emerge. Not that he was barred from the fresh air, for the gardens on the roof were open to him.

Only the private quarters of the Council were barred, and it was a strictly enforced rule that no man was ever to enter these. They were kept locked by devices to which only the members possessed keys—tiny electro-oscillatory gadgets they wore at all times on their persons. More than once Dawson speculated on what lay beyond those eternally guarded doors.

He was given almost luxurious private quarters high up in the dome. Though there had seemed to be no windows, the touch of a button made part of the wall transparent as glass, so that he could see for miles over the rolling green countryside. Sometimes a plane would take off or arrive. That was his only contact with the outer world, save for a one-way television that would not permit him to send out calls.

There were perhaps a thousand men and women working in the Capitol, trained scientific experts who spent a few months in each year there. For the rest, they were free to go where they chose, with ample amounts of work-units at their command. Yet over all ruled the Council. There were no guards, save for nominal ones armed with paralytic needle-guns. Everything Dawson wanted, almost, was given freely to him. He wandered about the Capitol, his eyes open, trying to understand everything he saw. He was free—but a prisoner.

He saw much strange science, and saw, too, the great libraries where secrets of centuries were kept hidden away for time of need. If this knowledge could be thrown open to the world, he thought, a new era would dawn. Barriers would fall, and so many avenues of exploration would open up. Men would again search, with scientific zeal, for solutions of mysteries. They would delve deep into the Earth and the sea, and go out to the planets—perhaps even beyond them. If only he could disseminate this secret lore!

Mysteries were all around him. There was so much he did not understand. Why, for

example, had the Council not yet effected the "mental cure" they had promised? They seemed to have forgotten Dawson's existence.

No—not all of them. More and more Laurena San sought out his company. He learned much from her, though always he was conscious that she carefully guarded her tongue. Laurena spent many longsees with Dawson. She could not understand why he loved to walk in the open-air gardens on the roof, but she went there with him often, and they talked. Nor did Dawson draw back from the contact.

CURIOUSLY enough, he realized that, as time went on, he found himself thinking less and less of Marian. The familiar features of her remembered face had changed. Whenever Dawson tried to recall them, he saw instead the face of Laurena. And, at first, this was bitter to him, though soon he realized the futility of faithfulness to dust. Besides—so he told himself, perhaps not with complete honesty—the more he encouraged Laurena's companionship, the more he could learn from her. And that information might come in handy—some day.

Would that day ever come? Time slipped past, idly and slothfully, and Dawson found himself almost submerged in a slough of pleasant idleness.

It was so easy to do nothing, to have every wish granted, provided he forgot the existence of the outside world.

One thing kept him from forgetting entirely. That was Fered. Seeing Fered, he remembered Bethya, and much else.

So he walked with Laurena in the flaming, exotic gardens, far above ground level, with the cool winds blowing upon him, and learned from her. . . .

"How did the Council begin?"

"They were sitting near the great silvery dome, three hundred feet long, that rose from the center of the roof. They sat on a sloping lawn under a magnolia tree, and blossoms were drifting down about them, while the heavy fragrance was strong in their nostrils. Dawson could almost imagine himself back six centuries in time.

"How did it begin? Why, through logical evolution. According to history, there was a world war in nineteen-ninety, which left the Earth desolated. A Technate of scientists rose and took command in various countries, eventually combining their forces. In time this gave place to the Council."

"I see. What were you before you joined the Council, Laurena?"

"She looked away.

"We won't speak of that. It does not matter now. Tell me, are you happy here, Stephen Dawson?"

He looked at her averted profile, and all the nostalgia for a lost Earth rose up in him.

"Happy? I—"

His arms went around her then. It was not Laurena San he was holding. It was his own world—all that he had lost, all that had crumbled forever into dust. But when his lips found hers—

It was not dust that he kissed—no!

He drew back at last, staring at her. She

put up her hand in a queer, helpless gesture.

"Stephen . . . I—I am afraid."

"Why?" he asked quietly. "Is love forbidden to the Council?"

"Love," she repeated, and at the note in her voice Dawson felt a curious, inexplicable shock. He looked at her sharply. It was almost as though she had never heard the word before, or had forgotten it.

She nodded.

"I have forgotten so much, or perhaps there was much that I never knew. When I first saw you, Stephen, I sensed something—" She hesitated. "I don't know—I don't know! Our world, our plans—"

Dawson caught the phrase.

"Your plans? What do you mean?"

She hesitated, but her glance toward the silvery, elliptical dome was betrayal. The man nodded toward it.

"Does the secret lie there?"

Laurena's gray eyes found his. She nodded slowly.

So there was a secret! Triumph leaped within Dawson. And then died as he saw the grief and pain in the girl's face. Involuntarily he reached out to touch her.

"You wish to go there?" she said. "Under the dome?"

"Yes."

And now a queer sort of excitement shook Laurena. She leaned forward.

"Now listen well. If I take you beneath the dome, it will mean that you can never leave the Capitol. There are secrets which must not be told."

"Was I ever intended to leave?" Dawson asked quietly.

"Yes, you were. But not until a psycho-machine had expunged all memory from your brain, making you harmless. Now—well, I do not think the Council will trust even the psycho-machine, after you have been under the dome. You must remain here forever."

A MAGNOLIA blossom drifted down between them. Dawson stared long at the girl.

"It's a good bargain," he said unevenly. "Very well."

She started to rise. He said, "Wait," and kissed her again. Her lips were tender as memories. There was a single scarlet blossom growing near them, and Dawson plucked this and put it in the curling brown hair.

She smiled at him, then rose, leading him toward the ramp that led down from the garden roof.

Down they went, winding through corridors of stone till they faced a blank wall. From within her shirt Laurena drew a tiny metal box. She pressed this against the smooth surface.

The panel opened. At first Dawson could not comprehend what he saw. A long bulging curve of metal that swept out above him, like the hull of an ocean liner—

Laurena pulled him through the threshold, and the barrier closed. Dawson saw now that he looked upon a space ship.

He remembered the silver, elliptical dome in the roof. That must be the ship's upper half. The lower portion was hidden in this

secret room, so that only part of the vessel was visible from above. A clever trick—the old "Purloined Letter" idea, of concealing an object in plain sight.

Laurena led him to where an open port gaped in the ship's side. He followed her in, finding himself in a little metal-lined corridor.

This ended in a room, paneled with what looked like black glass. Set flush with the dark floor was an instrument panel. Otherwise the room was quite empty.

Laurena turned to face him.

"Do you remember the space ship that fell to Earth hundreds of years ago?"

DAWSON nodded, blank with amazement. "This is—"

"Yes. It came from another world, Stephen. We never learned what the builders were like. It was robot-controlled. The Council took this ship and studied what they found in it. There were secrets of science such as Man had never dreamed existed. And that is why the Council is—as it is. Our knowledge is not drawn from Earth, but from an alien world as well."

"I see." Yet Dawson did not entirely understand.

"This ship lies here in a cradle. No one but the Council suspects its existence. It seems to be part of the Capitol building."

"Why is it here?"

Laurena indicated a larger white button among the others on the instrument panel. "Do you see that? If it is pressed, the ship would rise and head into space. It would leave the Earth. It is always kept stocked with concentrated provisions, enough to last for almost a century. It is our Noah's Ark."

"I don't—"

"We cannot see the future. We plan as we can. If cataclysm ever strikes our planet or the race—a comet, or a flood, or an incurable virus—we shall choose the hardest and flee with them in this ship, to begin life again on another world. And that is all. We shall go now," Laurena turned back toward the door, and Dawson perforce followed her.

Outside the ship, he hesitated, watching the girl. She was very lovely, with the scarlet flower in her hair, her level gray eyes no longer frightened. But, deep within him, there were questions he did not ask. Laurena's story had not satisfied him.

A Noah's Ark—yet why had not the Council provided for the building of thousands of space ships, so that not a few, but many, might be saved in the event of catastrophe? And then Dawson remembered the lack of furnishings in the ship, and the instrument panel set flush with the floor. Strange! He wondered what sort of beings had originally built the vessel. They could not have been human.

That night, in his suite, Dawson spent hours pondering. Now that he had seen the ship, he could never leave the Capitol—except, perhaps, at the expense of losing all his memories and becoming like a child. No—rebellion rose in the man. He would escape somehow. Or—

He remembered his sacred promise to Bethya, to help her save Fered. Impossible

now. He could not communicate with her. If he could, she still had the plans for the vibratory principle. Some new weapon might be devised from it. And this time he would strike without warning—

Dawson smiled bitterly. He was utterly powerless. Did he love Laurena? Yes, he thought—and yet, somehow, he was not quite sure. Perhaps it was because she was a member of the ruling Council, and, even if a marriage could take place, Dawson would still be in the position of a Prince Consort. That, to a man of his character, was unendurable. Yet under other circumstances, in a world where Laurena was not totally alien to him by ancient tradition, it might be different. A new weapon? The stasis ray would not work again. Yet vibration is an underlying principle of matter. Dawson remembered the days in Dasonee, when he had guided the conspiracy—

His eyes widened. There was a way! A way against which this ultra-modern civilization might not suspect, because of its very existence had long been forgotten. But he must be discreet so as not to awaken the suspicions of the Council.

"I want you to do something for me, Laurena. Back in Dasonee I had some pets. I'm rather lonely for them."

"You want them? Very well."

"The girl who runs the aviary there—Bethya Dorn—is probably keeping them for me. A tame falcon, and some pigeons. Will you have them sent on?"

"There is no harm in that, if you want them," Laurena smiled. Dawson held her arm as she turned away. "Yes?"

"I won't want them for a month. I'll be busy until then—I'm still not acquainted with the Capitol. Will you have Bethya send them here—in a month?"

It was hard to wait, after that. Dawson could not know whether Bethya would understand the significance of the enforced delay. Would she remember their conversation, long ago in Dasonee, during which Dawson had described—*carrier pigeons?*

CHAPTER VIII

Triumph of Dust

BETHYA understood. She spent that month training the pigeons to return directly to the aviary from great distances, doing it secretly. There was never any suspicion, nothing to connect the girl with the original plot to overthrow the Council. Dawson guessed all this when the pigeons—and the tame falcon—arrived.

He had spent the month in working out plans, trying to devise a new weapon from the vibratory principle. He was not an accomplished scientist, but the final work could be done by the remnants of the conspirators, whom Bethya would gather together. Vibration. . . .

Light is vibration. And Dawson outlined theories, plans, suggestions, aimed at creating a ray that would destroy all light vibrations, canceling them so that total darkness would result. A complete blackout, in which the conspirators, wearing specially-made goggles, might move with unimpaired vision.

To Dawson the idea seemed practical enough, in the light of this ultra-scientific civilization, but necessarily, he had to go much by guesswork.

Messages could be sent only one way. Dawson felt triumph when he released the first of the pigeons, saw it rise and circle, and then dart away southward. His heart was a lump in his throat. Would the trick be suspected?

It was not. Carrier pigeons were forgotten, not even mentioned in history. And the message went to Bethya. . . .

She could not answer. There was no way, without causing suspicion. Dawson tried to foresee every exigency, outlining in his shorthand notes just what Bethya should do, how she should gather together a group of plotters, how the scientists must work on the new ray-projector. Remembering the girl's new-found self-reliance, Dawson felt that he could depend on her.

Time passed. At last he sent the falcon back to Dasonee, giving as his reason the statement that the bird was homesick and pining. The truth was that the falcon had now become accustomed to the Capitol, and would return there promptly whenever Bethya released it in Dasonee. She would not send the bird, however, until the last moment, unless an emergency arose.

The days fled past. More and more Dawson found himself attracted by Laurena. He scarcely ever thought of Marian now. He was burning with anxiety to learn how the plot was progressing. But there was nothing he could do except wait.

The falcon came back, a message with it. Dawson read it surreptitiously. Bethya had not failed him. The machine was ready. The conspirators would wear protective goggles that would make the artificial darkness non-existent to them. They would land on the Capitol's roof whenever Dawson gave the signal.

He sent out a pigeon for the last time, setting the hour. And, after that, it was almost unendurable to wait. . . .

The day before the deadline, Dawson stole the tiny electro-oscillatory key from Laurena while she slept in the roof gardens, under the magnolia tree. He had to be sure that there would be a way of reaching the Council behind their locked doors.

THAT night Dawson quietly let himself out of his suite. He intended to go to the roof, meet his friends as they landed, and lead them to the sleeping-quarters of the Council. Too, he wished to be present so that he could protect Laurena. He did not entirely trust the newly-aroused spirit of his co-conspirators.

It was half an hour to deadline when Dawson slipped into a side corridor, hiding from a strolling guard. He decided to take a different way, past the rooms of the Council, usually left unguarded.

But trouble came unexpectedly. A guard caught sight of Dawson as he sped along, and lifted his needle-gun. Dawson was used to rough-and-tumble scraps, and he had faced guns before. He dived under the weapon, so that the paralytic needle hissed above him, and crashed into the guard's legs.

The two men went down, Dawson's hand shutting off a cry from his opponent.

Fighting was almost a lost art. A fist cracked against a jaw, and the guard lay silent. Dawson stood up warily.

He was beside a paneled door set into the wall—the sleeping-quarters of one of the Council. No sound came from beyond the panel. Yet Dawson hesitated, fearing that the noise of the scuffle might have reached dangerous ears. It would be well to make sure—

He drew out the tiny "key" and pressed it against the door. There was a soft clicking, and a line of light widened as the panel slid up.

Dawson saw a plain, unfurnished room of stone, with an open door set in the opposite wall. He stepped cautiously across the threshold, and the panel slid shut after him.

He went into the next room and stopped in blank amazement. It, too, was undecorated, though cut in the wall was a square opening no more than a foot high. But flat on the floor, motionless, lay the body of Ferred Yolath.

Something was dreadfully wrong about it. Dawson moved forward, the guard's needle-gun in his hand, looking down. Ferred's head—

THE entire top of the man's head was lifted up, as the lid of a box is lifted. And within the skull cavity was dark emptiness. Good God!

Dawson fought down his repugnance, knelt, and gingerly examined the body. The skull had been cleverly hinged, he saw, so that the top of the cranium could be lifted at will. And the bone had been replaced with metal that felt cold under the crisp hair.

He looked up in time to see something stir in the darkness of the little opening in the wall. From that gap a bizarre being emerged, so swiftly that Dawson caught only a glimpse of what looked like a monstrous spider. There was a flash of swift, innumerable limbs, the gleam of light on a shining, wrinkled, grayish body from which they sprang, and the creature sped straight for Ferred's body.

The spiderlike creature entered the empty skull, and the cranium-cap fell into place. Before Dawson could rouse himself from his shocked incredulity, Ferred's hand moved swiftly, and a round lens glittered in it.

Dawson swung up the gun. From the lens light flashed, and the weapon fell to the floor, while Dawson felt a shock of pain in his arm.

Fered stood up, still holding his lens-weapon ready. Dawson could scarcely believe what he had just seen.

Through dry lips he whispered, "You're not—Fered—you're some devilish being—some monster insect—aren't you?"

"Ask what you wish," the low voice said. "I must kill you now, so what you know will make no difference."

But Dawson could not speak. And the spider thing that spoke through Ferred's body, its garment of humanity, went on:

"You know, now, that we are not human. We came to Earth in the space ship you saw,

centuries ago. We are almost immortal. But our own planet, far beyond your Galaxy, was destroyed, and we sought for a new one. We are an old race, tired of battle. You said that Mankind stagnated under us. This may be true, because we, too, are stagnant. We reached the peak of our civilization eons ago, on a different planet, and were content to rest."

Dawson swallowed. "You're inhuman—"

"We are intelligent, far more so than humans. When we reached the Earth, we decided to remain here. We could, perhaps, have conquered by force, but it was unnecessary. Instead, we took the bodies of Earthmen, employed psychology, and created—the Council."

Dawson's fascinated gaze clung to the being's skull.

"We are almost immortal, as I have said. But we preferred to arouse no suspicion in Earthmen. They held their elections, whenever one of our bodies would wear out, and a new member would be appointed to the Council. The person's brain would be removed, and one of us would enter in its place. We are almost bodiless, Stephen Dawson. We developed into beings chiefly composed of brain-tissue, yet with the necessary mobile organs."

Now Dawson knew why he had sensed something alien about the Council from that first. They were alien—creatures from a different Galaxy, come to this planet centuries ago, to rule unsuspected over Mankind. So much was explained now—the stagnation of humans, the drug of contentment that had wiped out initiative. . . .

"Fered—" Dawson whispered. "What became of him?"

"We kept his brain alive. It was a most valuable one, and we wished to drain it of its knowledge later."

"You mean—it can be replaced—"

"Of course," the being said. "It can be replaced in this skull, and Ferred will live again. But that will not occur. You will die, instead."

Then darkness fell.

INSTANTLY Dawson realized what had happened. Bethya's planes had arrived, were even now hovering over the Capitol, sending down the vibratory ray that blacked out light. His reaction was instinctive. He sprang aside, feeling death touch him as the alien being used the death-lens, and grappled with the Thing.

He put all his strength into a smashing blow at where he guessed its jaw would be. Then he felt the creature go limp, and collapse.

Dawson bent blindly, his fingers searching. The knockout was complete. Under his hand he felt the chill metal of the skull-cap, and shuddered. Then he groped his way to the door, using the "key" he had taken from Ferred to let himself out into the corridor.

He was alone in blind darkness. Guided by touch alone, he felt his way upward. He had two "keys" now, Ferred's, and the one he had stolen from Laurena. He hurried on.

He was to meet Bethya on the roof.

Fresh air gusted against his face. He heard low voices, and hands seized him. He felt goggles being slipped over his head, and then, amazingly, he could see again, though there was a queer absence of perspective.

Three planes stood near by. Goggled men, armed, were still pouring from them. A knot of figures stood near Dawson, among them Bethya, a vicious little gun in her hand.

"Is Fered safe?" she asked.

Dawson nodded. He could not bring himself to speak.

"The Council? Where—"

"Come on." He led the way back down into the Capitol, past blundering figures of guards, who were ignored. They were harmless now, and could be disarmed later. Men scattered through the building to take over.

But two score followed Dawson and Bethya. The man wondered whether the Council would be in their sleeping-chambers. They probably were. They would feel safe there, not knowing that he had two keys.

"The Council must die," Bethya said grimly. "It's the only way."

And Dawson, knowing what he did, could not reply. He paused by the first of the

looked down at that curling, dark head. His hand went up—touched a brown, silken lock—

He jerked back, longing for death. He said abruptly, "No!" and Laurena looked up at him, blindness in the gray eyes that were now so dear to him.

"The Council has fallen," he said, as the door lifted, letting in the attackers. "Do just as I say. It's the only way to save your life."

There was no time for more. He saw Bethya enter.

"Stand away, Stephen!" she cried. Her gun lifted.

Dawson swung Laurena behind him.

"Wait! Listen—" His gaze probed into Bethya, making her pause.

"Well?"

"Listen to me, Bethya. Fered is safe—"

"He's unconscious. We found him."

"His brain has been removed from his body," Dawson said succinctly. "It's still alive, and can be replaced. This girl can do it. I do not know if any other person can."

"Fered—you say—"

"It's true. In exchange for her life, Laurena San will give you back Fered."

NEXT ISSUE'S SCIENTIFICTION NOVEL

TROUBLE ON TITAN

Featuring Gerry Carlyle

By ARTHUR K. BARNES



AN ARGOSY OF INTERPLANETARY EXPLORATION!

doors, showed Bethya how to use the key, and stood aside, letting the men pour past him. He had a glimpse of one of the older Council members coming forward in startled anger, a lens-weapon in his hand. Then he was shot down mercilessly.

DAWSON went to the last of the doors, knowing that Laurena was behind it. The others had not caught up with him yet as he opened the panel and slipped in, closing it behind him.

He saw Laurena, standing in the center of the room, staring around blindly, a lens in her hand. Her face, surrounded by brown curls, was frightened.

"It's Stephen, Laurena," he said softly.

She gave a little sigh, let the lens fall and reached out into the darkness that surrounded her. The man came forward and took her in his arms. She touched his goggles.

"Stephen, what—"

Then she was silent, clinging to him, frightened at the sound of shots that came faintly to them.

Dawson felt the warm softness of her, the fragrance of her hair in his nostrils. He

BETHYA looked at Laurena. "Is it true? Can you—and will you?" She lifted the gun significantly. "If you do not—"

Laurena nodded.

"I—I'll do it. Yes."

And, somehow, Dawson found himself wishing that the girl would fail in the attempted operation, that she would not reveal the ultra-surgical skill that would prove her a member of an alien race.

He did not watch. He went on an errand, and when he returned, there was a strange, greenish blood on his hand, and he was white and trembling. Yet, somehow, he felt triumph too. The knowledge—the scientific lore—in the Capitol would be given to Mankind now, and the race would live again, strong and vital and eager as of old. Beauty would no longer mean decadence.

The darkness-ray had been shut off, and there was now no need for the goggles. Dawson entered the operating room and stood by the door, a gun dangling idly from his hand as he watched. Laurena, in sterile white garments, was motionless, looking at the still form on the table.

Bethya bent over Fered's body, her soul in her eyes. She gasped as the man stirred.

Fered's lashes trembled, lifted. He saw the girl.

"Bethya—Bethya, darlya—" he whispered. That was enough. The gun whipped up in Dawson's hand. With the other he reached out for Laurena and dragged her close. The others whirled, startled.

"Laurena San has earned her life," Dawson explained. "I'm taking her with me. Good-by, Bethya. I kept my promise to give Fered back to you."

The girl did not answer, and before she could move Dawson was in the corridor, taking Laurena with him. Through a long corridor they went, and up, pausing at last before a wall where Dawson used his "key." The panel lifted, and then crossed the threshold to stand before the giant space ship.

Dawson carried Laurena into it, closing the port behind her. He went into the control room, where he released the girl. He touched the white button on the instrument panel.

The smooth, dark walls were suddenly darker, and flecked with stars. The moon, larger now, hung silvery and mottled like a lantern. The great cloud-hung globe of the Earth was visible on the floor vision-screen.

They were in space.

Dawson went toward Laurena. His hands gripped her arms.

"I do not know," he said, oddly. "You may not be like—like the others. But I couldn't be sure without. . . ." He stopped, his eyes searching the heart-shaped, tender face. "You wouldn't be safe on Earth now, and Earth might not be safe from you, if you're like—the others."

She did not answer. The gray eyes met Dawson's without evasion.

THE girl gently captured one of Dawson's hands and lifted it to her head. He resisted at first, and then felt a sudden, impossible hope at the touch of the soft ringlets. She guided his fingers. . . .

No chill of metal made him draw back now. For Laurena San was—human!

"Yes," she said quietly. "I did not know

you really thought—"

"Laurena!" Dawson's voice was unsteady. "But how—"

She smiled at him.

"Always, since the beginning, one member of the Council has been human. The—the others were afraid they would lose touch with the race. They needed a 'bridge,' someone who was *en rapport* with humanity. It counteracted their own inhumanity, to some extent. They took me when I was a child, and raised me in the Capitol, teaching me their own knowledge. In time I became a member of the Council—but Stephen, Stephen! I have always been human!"

The man shivered a little, and glanced to where the image of the Earth hung small in the visiplat.

"You cannot go back," he said slowly, with meaning.

Laurena did not answer. And Dawson went on:

"The human race would hate and fear you, because you were a member of the Council. It would not matter to them that you were not like the—others. You would not be safe. And you learned much from the Council. Knowledge that no human other than you possesses. Knowledge that makes the Earth unsafe, if you ever decided to use it. We must be exiles—always. We can never go back. . . ."

The girl waited, her eyes very bright. Dawson's arms went around her. He drew her close.

"But you're human, Laurena San! A girl I can love whole-heartedly, without any doubts or fears!"

"I love you, Stephen," she said. "Exile will not matter, as long as we're together. We'll find some other planet, some new world—"

Together they turned to watch the distant, receding sphere of the Earth. The star-bright darkness of space walled them, the limitless unknown. But they were no longer afraid.

They would find a new world out there among the stars.

ANSWERS TO SCIENCE QUIZ

(See Pages 66-67)

POSITIVE OR NEGATIVE

1. True.
2. True.
3. False.
4. True.
5. True.
6. False. Element No. 85 was the last one to be discovered.
7. True.
8. False. It is steadily decreasing.
9. True.
10. True.
11. False. It's just the opposite.
12. True.
13. True.
14. True.
15. False.
16. True.
17. True.
18. False. In television, each picture must be broken into several hundred thousand points of light. Not so with movies.
19. True. This is due to a growth-promoting factor in the mucus secretion from the

- skin of the early fish inhabitants.
20. False. Genes are sub-microscopic in size.

TAKE A LETTER

- | | | |
|------|------|-------|
| 1—b. | 5—a. | 8—d. |
| 2—d. | 6—b. | 9—c. |
| 3—a. | 7—c. | 10—a. |
| 4—c. | | |

WHAT'S MY ELEMENT?

Iron.

WHAT'S MY PLANET?

Mercury.

IT'S A DATE

Archimides—787 B.C.
Copernicus—1473.
Galileo—1564.
Pascal—1623.
Newton—1642.
Herschel—1733.
Lavoisier—1743.
Avogadro—1776.
Darwin—1809.
Pasteur—1822.

HISTORY CLASS, 2133 A. D.

By **FREDERICK ENGELHARDT**

Author of "The Ends of Justice," "The Second Count Bakonyi," etc.



The big ship zoomed straight down

COMMODORE Otis T. Breckinridge, retired, raised his mild, sky-blue eyes from the clutter on his desk and fixed them on a gangling, tow-headed midshipman at the back of the room.

"Now what, Mr. Sharp, was the strategy employed by Admiral Bok in defeating the Uranian raider Z-twenty-three at Ganymede in the year 2133?" He frowned sternly as he asked his question.

"I'm afraid I don't know, sir."

"Didn't you study the lesson I assigned for today?"

"No, sir." Sharp looked slightly sheepish. "You see, sir, I—that is—we have a lot of studying to do on this new method of astrogation, and the new battle tactics evolved at the last maneuvers. I—all of us, that is—haven't any time to devote to ancient history."

"This, Mr. Sharp," the commodore said slowly, "is also a required course."

"Lieutenant Bristow, in Advanced Combat Problems, told us yesterday not to waste time on History," Sharp replied. "He said the School Governing Board is about ready to drop it, anyway."

The boy slid back into his seat. Breckenridge swung around in his swivel chair and gazed blankly at the parade ground of the American Space Service School. Flat and green, it spread from the quartz wall of the classroom to the docks down the valley. Unconsciously his left hand tapped his trousers leg where the stump of his own limb fitted into an artificial one. His right hand, thin and bloodless as a bird's claw, stroked the long white beard that masked the frightful ray gun burns he had received when the fathers of these boys were in their cradles.

This was not a total surprise to Breckenridge. He knew it was coming, ever since the old Governing Board was displaced by younger officers. One by one his contemporaries, veterans of the old space fleet, had been shelved. It was time he got out. He was ninety-nine years old, and had been on the retired list for the past twenty-four. But to drop History from the midshipmen's curriculum—that stung him. It hurt him more than the idle remark he had overheard four days before, in which a young captain had referred to him as "the last hidebound conservative."

"Gentlemen," Breckenridge said, turning again to his class, "I'm going to tell you a story. A story about a . . . a 'hidebound conservative.'"

The class perked up attentively. Commodore Breckenridge's stories were always good, though his course was a bore.

"First," the old man said, "I want to ask two questions. Do any of you recall Admiral George Nottingham?"

There was a pause, during which the commodore waited impatiently.

"He took a half-dozen old eggshells and defeated a Martian battle squadron at the Battle of the Moon," a youngster replied at last.

"Right," Breckenridge said. "Right, as far as it goes. Can anyone else recall anything outstanding about that

engagement?" There was no answer. Breckenridge waited a moment, then asked: "Who was Admiral David Farragut?"

This time it was several minutes before a gleam of knowledge showed in any of the puzzled young faces.

"I think he won a battle in one of the wars of the old United States republic," a midshipman hazarded.

Breckenridge sighed, although it was what he expected. Minds of the late Twenty-second Century were turned ahead, not back. He leaned forward over his desk and began his story, talking earnestly, with the restrained passion of a man who loves his subject, yet cannot overcome the iron discipline of a lifetime.

* * * * *

GEORGE NOTTINGHAM was probably the most conservative man who ever lived. He was the last officer in the Navy to concede that surface battleships were doomed by aircraft. He took even longer to admit that space ships were practical. There he stopped. He wouldn't set foot into any ship that had a speed of more than a mile a second.

When the Space Service, originally a branch of the old Surface Navy, was made an independent organization, Nottingham, because of his record and seniority, was put in command. For ten years he resisted all efforts to improve the ships. The people were tired of the long wars that raged all through the Twenty-first Century, and even more tired of paying taxes, so he had a strong following.

Then the Martian War broke out. Everyone could see instantly that our ancient space fleet was hopelessly outclassed. The Martian vessels were faster than anything ever seen before. They could rip through space at eight miles a second or better. Their long range guns could blast shells through a ship's side at a hundred miles.

Nottingham took off after them and managed to keep them from bombing Earth. But it was like a tortoise trying to catch a hare. Our ships couldn't even see the enemy because of the latters' speed. Pressure was put on Congress to build a new fleet. It was a field day for the inventors.

Every new scheme, and every old one that Nottingham had turned down, was tried out. When Nottingham resisted what he called "crackpot ideas," he was relieved of command and given a post as base commander.

I remember seeing him at the Shendoah Base when I joined the cruiser *Memphis*. He stood alone at the edge of the field, with his hands clasped behind his back and his big, square face twisted into a frown of disapproval.

But only a man who lived in the past could have frowned at the *Memphis*. She was a beauty, eight hundred feet long and eighty in beam. Her four rocket jets, powered by eight atomic converters, made her the fastest thing in space. She was armed with three long guns to a side, all she could carry, considering her slim hull and speed. They were only three-inches, of course, but their exploding shells could pierce any hull in existence then.

You gentlemen may laugh at her as an antique. But you wouldn't have laughed then, particularly if you saw the contrast between that sleek hull and one of the old, lumbering tubs Nottingham swore by. One, the old *Maine*, stood beside her in the dock. That great, egg-shaped scow could barely get out of her own way. She bristled like a hedgehog with useless old guns that couldn't cover half the distance required by the new maneuvers. I understood then that the Service was considering scrapping the old hulks for metal.

We were bound for patrol duty at the Moon. The Martians, as you may recall, seized the Moon during the last wars on Earth. They established a well fortified base in the crater of Copernicus, where they could create and maintain an atmosphere. It was from there the Martian raiders came.

The *Memphis* did a five-month tour of duty, then returned to Earth for a month's overhauling and to give the crew a rest. We had sighted several raiders leaving Copernicus. The only time you could see an enemy ship was when it was taking off or landing. We had exchanged shots, but at that time we were still sighting by guess

and by God. They never hit us and, as far as I know, we never hit them. After a month on Earth, we went back. That was the miserable routine we followed for five long years.

THERE'S the story of the early years of the Martian War, at least from the viewpoint of the Service. Our fleet was expanded until it matched the Martians', but the decisive battle that everyone anticipated never materialized. There were plenty of good reasons why it didn't.

High-speed space ships were new both to the Martians and to us. Remember, this was the year twenty-one. We still had our old Grand Space Fleet, though it was rusting away on Earth with its commander, Nottingham. We and the Martians were still busy, learning to handle the new, fast ships.

Besides that, there was the difficulty of even locating a target, much less training a gun on it. The only hits were scored on ships which were taking off and had not yet accelerated to invisibility, or which were landing and had decelerated until they were visible. Even these hits were dangerous. To make them, the attacking ships took an unholy risk in decelerating to visibility. Of course, when a hit was scored that ship was out of action. A space gun shell would punch a hole in any armored hull of that time, then bounce around inside the ship before exploding violently. A wounded ship was lucky if it made base.

So for five years we tried to pin the Martians to their Moon base. And they kept slipping past our blockade to bomb or strafe the Earth with heat rays. Naturally we tried to land troops on the Moon to make a surface attack on Copernicus, but the attempt failed. The transports were shot down before they could land. We also bombed and strafed the base. But it was a much smaller target than those the Martians were finding on Earth, and it had the protection of their whole fleet.

Except for the unfortunate people on Earth who now and then got in the way of a Martian bomb, it was a stale-

mate. The Martians didn't dare make an attack in force on Earth. With their fleet out of the way, we would have wiped out their base or land batteries. At the same time, we didn't dare send any sizable squadron on a raiding expedition to Mars or her colonies. We couldn't spare the ships, and Mars was too far from our Earth bases.

With a little thought, you young gentlemen can imagine the economic and political upheaval on Earth, even if you haven't bothered to study it. It was true that merchant ships could no more be attacked in space than a speeding cruiser. Only the Martians could and did deny bases to them, for they had grabbed everything in space while we were fighting on our own globe.

The Martian objective, of course, was to dominate the Earth as they did the other planets. For awhile it looked as if they were going to succeed. In fact, considerable pressure was being put upon our Congress to yield to the Martian demands, or at least to consider them.

From the first month of the war, everyone knew that the answer to the situation was the destruction of the Martian battle fleet. But how the devil were we to do it? The Martian strategists weren't idiots. They wouldn't gain any more by winning one big battle than they would get if they managed to starve us out. So they steadfastly refused to meet us, fleet to fleet. And it would have been the height of insanity for our admiral—Jack Miller was *Cincus* then—to heave to over Copernicus and invite destruction.

DURING those years, Congress was flooded with plans and half-witted tricks. One was inspired by the accidental collision of a cruiser of ours with a Martian battleship. It called for a fleet of small, fast ships to be manned by heroes who would hunt down and ram the enemy battle-wagons. Several of these ships were actually put in service and volunteers were even found to man them. But they all returned after a few weeks, haggard wild-eyed, and glad to get

back. A man might throw his life away for his planet on the spur of the moment. But when he has to cruise around for two weeks, looking for an opportunity, it begins to look more like drudgery than heroism.

Then old Nottingham came forward. There were rumors that the old mossback was still claiming interplanetary flight was not feasible. Like everybody else, he had a plan. And, like everybody else's, it was cockeyed. He wanted to lumber right into the teeth of the Martian battle fleet, and attack Copernicus with his antiquated Grand Space Fleet.

Any other man would have been laughed out of the Halls of Congress. Nottingham himself heard a few snickers, even though he was a full admiral. But he was entitled to an outwardly respectful hearing. Anyhow, all he asked was a chance to explain the details of his plan to the War Committee and the Space Service staff. They had nothing else to do, so they let him talk.

But the next day's general orders carried a pretty startling paragraph. The *Maine*, *Vermont*, *New Hampshire*, *Connecticut* and *Rhode Island* were to be refitted for service! You should have seen those clumsy barges.

There was so much jabbering at the Shenandoah Base, the place sounded like a monkey farm. Old Nottingham was eighty then if he was a day. He would have been retired years ago if it hadn't been for the war. But he strutted around like an antique rooster, scowling at his ships and barking at anyone who got in his way. He was the hero everyone had been waiting for.

He was certainly the only big shot who acted as if he were going to do something, and that alone was enough to inspire confidence. Men actually volunteered for duty with the old tubs, though for all they knew, he might load them with explosives and dive into Copernicus. I couldn't stand the High Command's indecisiveness any more than they could.

"Sir," I said to him one day, "I'd like a post on the *Maine*."

He favored me with his customary, or everyday scowl.

"Why?" he snapped as he eyed me.

I realized then how much he must have felt the contempt of the rest of the Service. Even a hidebound conservative has feelings.

"Well, sir," I said, ashamed, "I don't know."

"I'm glad there's one officer in the Service who will still admit that," he grunted. "All right, put in your transfer request."

That was easy, because I had been on sick leave. Too easy, I thought later, when I went aboard the relic. She just about missed being prehistoric—don't know how. In spite of her advanced age, she had a skin like a baby, compared with the hide of the *Memphis*.

"You'll be gunnery officer, Breckinridge," the old man told me. "I want to talk to you about it, though."

"Yes, sir," I said. "I guess we'll need some new armament."

"We're getting it," he retorted frigidly. "Some new, heavy guns. Six-inch and eight-inch rifles."

Automatically I started to object. Then I realized that he knew what he was talking about. The *Maine*, with her big hull, could easily stand the recoil of an eight-incher, if she were moving slowly. She couldn't go fast, anyhow. But that meant—

"You are probably thinking of the target we will make by not being invisible," Nottingham barked coldly. "Forget it."

"Yes, sir," I said.

THE new guns arrived and were installed. I was kept too busy to worry about what would happen when the Martians took a squint at us through their gunsights. But I had plenty of time to worry on the trip to the Moon. The *Maine* and her sister ships had a top speed of one mile per second. In other words, it took us three days to cover a distance I had traveled a dozen times in the *Memphis* in a few hours.

The Martians certainly knew we were on our way. Even their telescopes could have picked us up. But we didn't raise one of their ships until we were six hours off the Moon. Then our instruments indicated their whole

fleet was forming to meet us. We must have seemed easy prey, and the whole crew was beginning to think so too.

Nottingham made a final tour of inspection. The *Maine*, and the other four old battlewagons as well, had been so subdivided by partitions that they looked more like bee hives than ships. We had plenty of guns, all the old scow could drag into space, and each one had its own space-tight turret. When we went into action, each cell would be automatically sealed. Nobody could kick about the way leaks in the skin would be limited. But still we weren't happy.

"Admiral," I pointed out to Nottingham, "have you considered the effects of concussion when enemy shells explode inside us? We certainly can't dodge all of them."

"Have you ever studied history, Lieutenant?" the old man inquired.

"No, sir," I acknowledged. "That is, not much. In the Space Service we've been too busy making it."

"Well," he growled, "I suppose if a fool refuses to learn by the experiences of others, there's nothing for him but to acquire some of his own."

Nottingham had been given command of the entire fleet. So the next few hours saw plenty of messages hurled through space from ship to ship, and from ship to Earth. At first Admiral Blakston, whom he relieved, refused to acknowledge the old boy's commission and appealed to Congress. When Congress ordered him to obey Nottingham, he kept our Fleet Control Board hot with protests. And at the time I didn't blame him.

Nottingham's strategy was simplicity in itself, but so is suicide. He meant to head straight for Copernicus, level off and blow the old crater right out of the Moon. We had the guns and bombs to do it, all right. But what about the Martians' land batteries and their fleet? Unless the Martian gunners were suddenly stricken with paralysis, we'd get a hot, fast answer. The old Grand Space Fleet, and our new ships as well, would be scattered all over the Moon inside a half hour.

(Continued on page 127)



Science Questions and Answers



ROBOT BOMBERS IMPOSSIBLE

In the past, I have read accounts of robot-controlled airplanes. Why then, aren't such planes being used in the War today?—C. P., Provo, Utah.

Unfortunately, or rather fortunately, such development of radio-controlled aircraft is canceled by the fact that the robot plane can be controlled by the ground operator only so long as it remains within his sight. Should the machine be flown out of sight, or even disappear behind a thick bank of cloud, all command over the robot plane's movements is lost.

This is not due to the machine's inability to respond to wireless signals, but to the fact that if the plane is out of sight the operator cannot prevent it colliding with other aircraft or know if it is passing over terrain the convolutions of which may create air pockets or other phenomena affecting the machine's altitude or course.

Hence, the operator has no indication when it may be necessary to manipulate the buttons on his switchboard to keep the machine on its course. Moreover, the operator of a robot bomber out of his sight could not know if the enemy were engaging it, or whether it was flying straight into a blood barrage.

More feasible than radio-controlled bombers would almost certainly be pilotless defence fighters. Defending aircraft such as these are not often required to wander more than a few miles or so from their stations, and should this be necessary, a network of stations whereby a plane could be passed from one radio-control station to another would permit the machine to be kept in sight all the time it remained in the air. Here, again, though, there is the almost insurmountable difficulty that it requires a man on the spot to make snap decisions to ensure the success of a fighter's tactics.—Ed.

WONDERS OF ECHOES

I know that an echo is caused when the waves of air which are created when you shout are thrown back again, so you don't have to bother explaining echoes to me. But do you happen to know what famous locations offer the greatest echoes?—J. N. S., Iowa City, Iowa.

One of the most remarkable of multiple echoes is that heard in the castle of Simónetta, two miles from Milan. It repeats the echo of a pistol-shot sixty times. And outside Shipley Church in Sussex, England, is an echo which repeats twenty syllables in an astonishing manner.

Another unusual echo is that heard from the suspension bridge across the Menai Strait, between Anglesey and Carnarvonshire in Wales. The sound of a blow from a hammer on one of the main piers of the structure is returned in succession from each of the cross-beams that supports the roadway and from the opposite pier at the distance of 576 feet, in addition to which the sound is repeated many times between the water and the road-

way at the rate of twenty-eight times in five seconds.

In the Whispering Gallery of St. Paul's Cathedral, London, England, the faintest sound is faithfully conveyed from one side of the dome to the other but cannot be heard at any intermediate point.—Ed.

SPEED OF LIGHTNING

How fast is a flash of lightning?—E. E. S., Santa Barbara, Calif.

Through the use of certain types of special cameras, investigators have been able to discover that lightning frequently consists of many successive discharges along the same path. The total time used up by these successive flashes, appearing to most of us as a single stroke, may be as long as a second and a half. The time required for a single discharge, on the other hand, varies widely, but an average of 100 micro-seconds is perhaps not far off.

In one-millionth of a second, an object moving at the incredible speed of a thousand miles an hour does not move one-sixteenth of an inch—in other words, it is practically standing still.

The passage through the air of an electrical discharge, such as lightning, causes a pressure to be developed which is dependent upon the amount of current in the discharge. This pressure may reach its full magnitude in as short a time as five millionths of a second, or perhaps even less, and produces many of the damaging effects associated with lightning.—Ed.

BEATING THE BOMBERS

Inhabitants residing in Europe's war zones are told to keep their mouths open when planes overhead begin dropping bombs. Why?—S. K., Racine, Wisconsin.

When civilians or soldiers in Europe hear airplanes, they scatter off the roads and lie down on the earth. And those who know stuff twigs or sticks or stones or their hands into their mouths. The purpose of this is to keep their mouths open when the bombs fall.

If the bomb doesn't hit one, the concussion will. The concussion goes down into the person through the eyes and ears and nostrils. If it can't get out through the nostrils, then it will blow its own holes in the person, thousands of them, tiny as pores, but bleeding. The chances are more people have been killed in the present war by keeping their mouths shut than by anything else.—Ed.

INSECTS VS. AIRPLANES

In the perfection of flight, which is more superior, the airplane or the insect?—S. T., San Diego, California.

Insects have attained a perfection of flight which makes a bird look clumsy and an airplane an unwieldy mass of wood and metal. The most expert flying insects can go into reverse gear and fly directly backward with-

THIS department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited, we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical, also, to promise an immediate answer in every case. However, questions of general interest will receive careful attention.

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HAVE you ever tried? Have you ever attempted even the least bit of training, under competent guidance?

Or have you been sitting back, as it is so easy to do, waiting for the day to come some time when you will awaken all of a sudden to the discovery "I am a writer"?

If the latter course is the one of your choosing, you probably never will write. Lawyers must be law clerks. Engineers must be draftsman. We all know that, in our times, the egg does come before the chicken.

It is seldom that any one becomes a writer until he (or she) has been writing for some time. That is why so many authors and writers spring up out of the newspaper business. The day-to-day necessity of writing—of gathering material about which to write—develops their talent, their insight, their background and their confidence as nothing else could.

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out altering the position of their bodies. They can hover in a breeze, they are expert gliders, they can attain maximum velocity from a standing start in a fraction of a second, they will perform the most intricate stunt flying in a tiny space.

An insect's wings are beautifully adapted for flight. They are extremely light; the four wings of a drone bee weigh only half a milligram. The front half of the wing is of greater rigidity than the rear half. Such an arrangement gives help in forward flight and also enables the wings to be neatly tucked away when not in use.

The second pair of wings in some insects appears to act as an alternating gyroscope. An insect's wings, therefore, are of greater efficiency than an airplane propeller and possess the flying mechanism of a helicopter, except that in the insect the wings neatly combine the function of two sets of propellers working at right angles to each other.—Ed.

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The Story Behind the Story

WE'D all like to buy a ticket for an excursion into the future. The centuries to come seem inviting, what with the age of science looming ahead.

But suppose they only sold one-way tickets into the future? Suppose you were given the means of projecting yourself into tomorrow, but were not supplied with a passport insuring your safe return to the present? Would you take off on the time-travel jaunt, regardless?

Think before you hurtle yourself into a future that knows no return! The trip to tomorrow means complete severance with all ties that link you to family, friends and current interests. Are you willing to lose them—forever? What's that? You don't want to buy a ticket on the Time Express? Say, doesn't anyone want to visit the future? . . .

Apropos of this subject, Henry Kuttner has woven the fascinating story of an Earthman who did go into the future . . . and had no way of returning to his yesterday, which he preferred. You'll find the novel **REMEMBER TOMORROW** one of the most poignant time-traveling stories you have read in many a moon. Here goes the data concerning its origin directly from the author:

REMEMBER TOMORROW deals with one of the oldest of science-fiction themes, handled so effectively by H. G. Wells in "When the Sleeper Wakes," and even before that in Arnold's "Phra the Phoenician"—a classic of its kind—and the famous "Looking Backward," by Bellamy. It is not yet a moth-eaten idea, for it is founded on a fascinating and very human basis.

I have tried to give the tale a somewhat different twist by concentrating chiefly upon the human values rather than on so-called "cold science"—not that science need ever be cold and lifeless, by any means! I have tried to work out a logical evolution for civilization, from the starting point of the present day, provided certain unusual elements were added.

Thus my Utopia is lacking, perhaps, in the spectacular and marvelous, but I looked at it through the eyes of my protagonist, who is not exactly a "hero." Rather, he is an ordinary, twentieth-century man, bound to his own time by the innumerable human ties we all possess, and looking at the new world of the future as I any—would look at Buenos Aires were I suddenly transported there.

However, there is a difference. I have some indirect knowledge of Buenos Aires—and ships sail from there to New York. But no ships sail into the past. Those waters are closed; the time-stream flows in only one direction. I had to imagine, then, that I had never heard of my Buenos Aires, and that I could never return from it.

The psychological effect of a journey into time is a fascinating matter for conjecture. And so I made Steve, not a great hero, but an ordinary man, who lived mostly as you and I do. He cannot hope to comprehend at once the scope of a civilization centuries beyond his own. He must learn a little at a time.

And—always—he must look back, and remember. In the words of the poet:

*Into my heart an air that kills
From yon far country blows:
What are those blue remembered hills,
What spires, what farms are those?*

*That is the land of lost content,
I see it shining plain,
The happy highways where I went
And cannot come again.*

So my story is based, to a large extent, upon the psychological factors of time-travel. The science is, I think, logical, and the evolution of civilization as I pictured it is not impossible. As for the mystery that surrounds the Council—well, I won't go into that in detail here, for obvious reasons. But after you've read the story, bear in mind the warning of von Helwing in "Dracula" . . . "There are such things." It is all quite impossible, of course, but—! It could be happening now—and somewhere, as you read this, a Council may be preparing its plan already. Impossible . . . is it?

EXILED FROM EARTH

MAN can create a Utopia—today! Employ our greatest scientists . . . give them resources and freedom . . . and the combined scientific wizardry of the world's chemists, biologists and physicists will make the globe the perfect place to live in.

That's the impression we gather from reading Arthur J. Burks' novelet, **CITADEL OF SCIENCE**, a story of a band of scientists who had to travel to another world to make our planet a Utopia. Here are a few words from the author:

The story behind the story of **CITADEL OF SCIENCE** is the story behind any "Lost Horizon." It is based on the eternal human yearning to do as one wishes. In this age, when lesser minds salve their egos by doing everything possible to harass greater minds, when the gangsters who rule nations do all they can to destroy scientists of real worth, it would be pretty swell if those scientists could find a safe place where, without harassment, without lack of facilities, they could allow their brilliant minds full play.

What better places could be found than the yet unexplored planets of our own System? There would be plenty of elbow-room, nobody but themselves, nobody to advise them or interfere with their work. Maintaining contact with the Earth they could keep abreast of development there. That would be enough. There would be no homesickness, because scientists buried in the work they love would never even miss their homes. Their homes, like their heaven, would be where their hearts are.

What more could any scientist ask than a true "Citadel of Science"?

METEOR MENACE

SPACE is not empty! It's abundant with countless millions of meteors. And even the smallest of these cosmic fragments, an inch or two in thickness, offer a serious

hazard to space travelers if and when inter-planetary flight becomes an actuality.

A cruising meteor, about the size of a nickel, that collides with the hull of a space ship, will keep right on going—puncturing any alloy that might have been built in anticipation. Even specks of meteoric dust, traveling at terrific velocities, will penetrate the walls of ships.

How will man guard against the meteor menace? Raymond Z. Gallun thinks he has the answer in his novelet, **SECRET OF THE COMET**. Let us know if you agree. Here's what the author has to say regarding his story's background:

When real, practical space ships are finally invented, many new factors, both limiting and aiding travel, will doubtless be discovered. But even now there is plenty of room for speculation, backed up by sound data already at hand. Cosmic rays—which may prove dangerous in spatial concentrations—meteors, and the first and most difficult problem of escaping from the Earth's gravity, have already been discussed many times.

One theorist suggests the Moon as a good and not too distant space station, for taking off to the farther planets. Possessing a much smaller gravity than the Earth, it should permit higher speeds with much less consumption of fuel, and a consequent greater payload.

But why not a space ship that is, in effect, a little world that can move about in the Solar System at will, with no strong gravitational forces to combat? Safe and secure, it stays away from a too close approach to large planets and their gravity. Lesser rocket ships act as tenders. The situation is like that of an inhabitant of Mars flying back and forth between his native planet and the tiny Martian moon, Phobos, which is ridiculously near.

That is the basis for **SECRET OF THE COMET**. As for the story itself—the human part of it—that comes out of combative necessity that so often goes with any sort of progress. A science-fiction addict knows what I mean if he runs across a doubter and tries to convince him.

Occasionally there is even that nice old lady who not only denies our hope that we are paving the way for better things—helping to pave the way a little, anyhow—and denounces the whole movement as criminal and blasphemous, and part of the corruption of the youth of the world!



"Haven't got what it takes? Who? ME?"

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A BUILDING one mile high! Such a super-tower is the dream of modern-day engineers!

American architects plan a structure which shall extend a mile and a quarter into the air—6,500 feet, about 666 stories. This super cloud-scraper will be five times as high as the Empire State Building. Shaped like a needle, the tower would be an admirable means of defense and offense in aerial warfare. Its roof could harbor observation planes, pursuit planes, all ready for immediate takeoff.

Such a tower would be very effective either for observations of various meteorological elements: pressure, temperature, humidity, etc., at different altitudes spaced along the tower, or for measuring radiation—of the sun for instance—which can be done better when the influence of the lowest strata of the atmosphere is eliminated.

There's a medical argument, too. The upper atmosphere is free from bacteria, and would therefore make an excellent environment for victims of maladies whose cure demands pure air.

Science is going up!

AMAZING SHADOW SHOW

A POWERFUL new lamp lights the invisible! Smells become visible! Transparent gases take shape! And heat and cold can be seen with the naked eye in an amazing scientific shadow show being staged at the General Electric laboratory in Schenectady, N. Y.

It's all made possible by the world's most powerful electric light—a tiny, dazzling, midget sun. When the powerful rays of this tiny lamp pass through various liquids, gases, and transparent solids, they are refracted, or bent, just enough to throw a shadow on a white screen.

Thus, observers can witness the shadow of perfume scent, the shadow of invisible heated vapor, etc. Through such scientific shadow shows students of tomorrow will be able to see with their own eyes chemical reactions and other scientific occurrences which hitherto have been invisible.

SEA TREASURE!

A MODERN explorer is about to bring forth from the ocean's deep greater treasures than Captain Kidd and all the pirates of known history ever sunk for safe-keeping!

This explorer is the Dow Chemical Company—one of America's foremost chemical manufacturers. And they're doing their treasure-hunting along the Gulf of Mexico, extracting magnesium metal from the sea water by means of a special process.

King Neptune has waited countless centuries for scientists and engineers to discover the combination to his boundless vaults and submarine storehouses. After exploring this limitless domain for many years, Dow technicians have brought back word that every cubic mile of sea water contains 5,700,000 tons of valuable magnesium, among other elements.

Operating at full capacity, the Dow plant will find enough magnesium in just one cubic mile of ocean water to keep it going for 800 years! Science has put treasure-hunting on an industrial basis!

THE LARGEST MICROSCOPE

THEY'VE just built the world's most gigantic microscope! Weighing 200 pounds, the microscope has 5,682 parts.

Royal R. Rife, of San Diego, who built the microscope, has eliminated distortion in his instrument. The image produced by his new two-foot-tall apparatus does not pass through the usual air-filled tube, but along an optical path of quartz blocks and prisms.

The microscope is reported to be so powerful that it reveals bacterial organisms never seen before.

Some sight!

HIGHWAYS OF THE FUTURE

THE roads of the future will be streamlined—with glass!

Ten years' experimentation with waste glass have shown London inventors how to produce a glass material which can be used to surface highways and pavements. Glass, one of the hardest synthetic materials obtainable, can be subjected without impunity to wear, tear, abuse. Glass, unlike tar, cement and wood, is little affected by weather conditions, by water, by oil, by other materials which harm roads. It is easily washed.

The advantages of such glass roads are many. The cost is almost nil. Old waste, broken glass will do. Glass thus gathered is melted, poured into special triangular moulds, subjected to high pressures. It is then treated, and is ready for use.

Once treated, the glass triangles that compose the road will wear indefinitely. If some accident occurs, the little glass forms can be readily removed. The glass roads also offer non-skidability. The diamond shapes of the glass forms composing the roads render the highway non-skid. Any object moving over it meets resistance, whether surface is wet or dry.

NO NEEDLES!

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A new phonograph to appear on the market employs brand-new principles. The needle has been replaced by a sapphire jewel which floats through the grooves on the record, transmitting the tone vibrations to a tiny mirror swinging freely on an axis.

A beam of light, produced by a small bulb and directed at this vibrating mirror, picks up the vibrations and reflects them on a photo-electric cell. The cell, activated by the vibrating light beam, converts these vibrations electrically into music.

AMATEUR CONTEST NEWS

SEVEN big winners in our national contest for amateur scientific authors so far! Each month the editors of **THRILLING WONDER STORIES** judge scores of stories by fantasy followers in the hunt for a new writer . . . a fan with a story interesting enough to merit publication in **T.W.S.** And thus far seven scribes have rung the bell!

Why don't you enter this national contest, limited strictly to amateur writers? If you have an idea for an original story, dress it up in narrative form and let us see it. Write up that pet interplanetary theme you've been hoarding all these years before some professional writer scoops your idea. Type it up, double-spaced, and send it to **AMATEUR WRITER'S EDITOR**,

(Concluded on page 122)

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(Concluded from page 121)

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To obtain a **FREE** certificate of membership, tear off the namestrip of the cover of this magazine, so that the date and title of the magazine show, and send it to **SCIENCE FICTION LEAGUE, 22 W. 48th Street, N. Y. C., N. Y.**, enclosing a stamped, self-addressed envelope.

And readers—write our Sergeant Saturn a regular monthly letter. Tell him which stories you liked best, which are your favorite features and artists. Your suggestions and criticisms have made T.W.S. scientific's leading magazine. Help us maintain that leadership.—THE EDITOR.

LEAGUE CHAPTER NEWS

ERIE, PA., CHAPTER

Calling all Erie, Pa. fantasy readers! Messrs. Paul Gerbracht and Larry Buman, of that city, have announced the formation of a SFL Chapter in their locale.

All readers residing in the vicinity are requested to communicate immediately with Mr. Gerbracht, at his home, 1053 West 25th St., Erie, Pa. All inquiries will be promptly answered and you will be invited to attend one of his Chapter meetings.

HOW TO START A CHAPTER

Several months ago we published an announcement in this department informing readers as to how they can form a Chapter of the **SCIENCE FICTION LEAGUE** in their community. Now, in response to numerous requests, we are republishing that information.

If you are desirous of starting a Chapter in your neighborhood, write in to League Headquarters stating so with your application. If possible, get four other readers of T.W.S. to send in their applications too. When you furnish Headquarters with the names and addresses of five League members in your locale, we will send you an official charter. Your Chapter will be given publicity in this department, and we will publish news of officers elected, activities at meetings, etc.

SEE THE NEXT ISSUE FOR MORE CLUB NEWS AND A PARTIAL LIST OF NEW SFL MEMBERS

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THE READER SPEAKS (Continued from page 12)

was undoubtedly good—especially the soft-pedaling on the superman-do-or-die plot—which would be received with better words but for the archaic plot.

Though dinosaur stuff is also of equal vintage, the new idea and twistings of theme made this most enjoyable, and the cover does much better on my poll this month: No. 6 out of nine covers is far better than the Sept. place of ninth of nine and the Oct. spot of tenth out of twelve.

Burks' "A Snare for Tomorrow" is a dark horse winner in third place. The naive thought processes and odd actions of the hero were indeed refreshing. Morey good. Following closely is the second installment of the current "Via" series. After this totters the crime of the issue, Kuttner's "Reverse Atom," which was merely a conglomeration of disjointed events pulled together with the aid of a fair scientific theory. Bond's clever piece about the mails of the future is sixth and fair, but not up to the quality of "Parallels in Time." Last we find "The White Brood." I was glad to see a return of Hal K. Wells, but his story seemed to be just many words with little meaning. The underlying idea, though, was intriguing.

The article was pointless with very few interesting items of brightness to light up its drabness. Best illustrations were Marchion and Vessio's for "Reverse A."—New York, N. Y.

Okay, Pilot Hidley, but you voice your opinions in such a gentle manner that it is surprising you can be heard in the riotous company of our spacesters. Next time sink your teeth into it and bear down. Flowers or flower-pots, it makes no difference.

To speed things up a bit, we'd better cut in the full complement of rockets. Otherwise, we'll be clear past the orbit of Saturn before we make a dent in the old mail sack.

A CUSTOMER FOR MANX

By John Wasso, Jr.

I have just become acquainted with the delightful character of Pete Manx and would like to know how many Manx stories have already appeared in THRILLING WONDER STORIES and in what issues? Thanks.—119 Jackson Ave., Pen Argyl, Pa.

I hope our correspondence editor answered your inquiry, John. If he didn't, just give one more brief blast of your rockets, and we'll see that he does. Now for a brief blast—a sort of thunder on the left.

THE LEFT WING

By Ed Summers

Trifles make perfection, but perfection is not a trifle. On the cover of the new issue of T.W.S. Doc Davollo's got two left hands! Is he double-jointed?

And now comes praise! "Calling All Martians" was a swell article. Willy Lee always makes for good thick bites of technical science, and I want to see more from him in this capacity.

There were good stories in your last issue. And very good interior art-work. More Bond and more Petus Manxus, with a little touch of the old Wonder prevalent in the erstwhile speaking reader, and I'll vote for you in the Tucker poll.

Join the STEASER! Figger it out yourself. Ed. I only know that it will triumph.—646 West Beach St., Long Beach, N. Y.

Well, Ed, I'll tell you about Doc Davollo. I think your point is a bit techni-kay (to

use the new pronunciation, thanks to radio announcers of various and sundry communications). You see, Doc had two perfectly good hands, left and right, in the original painting, but the printing plates seem to have shoved the color a bit and changed the highlighting until his right hand does seem to know a bit too much about what his left is doing. What's this static about STEASFR? Wouldn't be Society To End All Science Fiction Rivalries, would it? Variety and competition are the spice of life, or so we have been told, and here comes a spicy letter out of the heap.

REMEMBER YESTERDAY

By Maryeve Spicer

I suppose this is an old tale to you—that of the fan who has been a steady reader for some years and finally breaks down to write a letter of approval to the editor. This is not exactly my claim—but it forms a slight basis for it.

Ten years ago I started reading s-f magazines. I enjoyed them so much I kept it up until I was about thirteen—a good solid three years later. Then it seemed to me that the quality of the stories dropped. In fact, that it just wasn't there any more.

I can still remember parts of those glorious serials by E. E. Smith—"Spacehounds of IPC" and Campbell's Morey, Arcot and Wade series—and I still remember the title of the first s-f story I ever read: "The Universe Wreckers." And I do remember a story from an issue of Wonder Stories quarterly about a little animal somewhat like a mongoose with two sharp poison fangs that bit under the chin to kill. I looked out the window that night and then crawled so far under the bed covers that I just wasn't around.

I'm caught up in the toils again—although I guess it will be hard to find stories that can live up to my remembrance of the tops in the old s-f line. Memory is a hard thing to beat. And here's my application for membership in the League to prove it. By the way, is there any branch of the S.F.I. in San Francisco, and if there isn't, may I have the privilege of trying to organize one?—San Francisco, Calif.

Bless your heart, Maryeve, you can dedicate a space-port any old where in the System that you select, and we'll back you up to the last rocket blast. We think it's a fine idea to organize San Francisco and make the Golden Gate city see the light of science fiction. We'll help with your S-F chapter all we can, but what's your address? Send it to us by the next mail and supply liner, and we'll run it in the next issue so space-men and space-gals can find your outpost.

Let's see—what in all combustion is this?

PAGING THE SAINT

By Harry Jenkins

May I offer a suggestion for an excellent—no superb science-fiction tale? Thanks, Get Leslie Charteris, the world-famous author of that modern Robin Hood, the Saint, to spin an s-f yarn with a character somewhat like the Saint. As evidence that he knows his science, I refer you to his letter in the August, 1939, issue of T.W.S. I know that I am asking the almost impossible, but I feel sure that Charteris would click in the science-fiction field.

Now for the rating of the October issue. As usual, the novel again romps home as the winner. "The Worlds of Tomorrow" is another gold star for Wellman. The 2nd place slot is a photo-finish between "Waters of Wrath" and "One-Way Trip Ride." With the former crossing the finish line a second before Williams' grand short.

Again the "Via" story ranks in the money

(Continued on page 126)

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spot, which is fourth. "Man About Time" has a bit of humor that's good, then bad. Good enough for 5th spot.

When are we gonna get some more Carlyle-Quades? (Next issue!) Keep Pention and Blake away—forever! Continue the popular "Via" series and get Eando Binder to return.

Bill Brudy says to shanghai Brown to Pluto. Do that—exile him forever! Murphy and Schomburg are good. Your new cover artist, Bercey, is really good. You must keep him. Your art department's rating is 80%, which ain't bad.—2409 Santee Ave., Columbia, S. C.

So, among other thing, you like Artist Bercey, do you, Harry? Well, we can't please everybody—at least, not all the time. But here's a tip for you: Take a look at the cover on the present issue of **STARTLING STORIES** currently on the stands. The old space dog thinks Bercey has done a splendid symbolic painting. Let me know how it strikes you. Sure, write to "The Ether Vibrates" department of SS if you like. I'm watching the atomic mixing chambers for both port and starboard banks of rockets. And tell Bill Brudy that Pluto is a heck of a long distance away. Its average distance from the Sun is 3,700,000,000 miles. Or doesn't he care?

Before we land this cargo and seal the airlocks preparatory to blasting off for our next issue, your sergeant simply has to add this one more letter which has popped out of the mail bag.

YOU'RE WELCOME!

By Bob Tucker

This is to thank you (which we cannot do enough) for all of your assistance and support of the 1940 Chicago Science Fiction Convention of a few weeks ago.

You know, all year long we fans praise and pan your magazines, but once a year, when a Convention is in progress, and some original drawings from Standard Magazines are up for bidding in the auction, whatever may have been thought and said the past year is at once forgotten, as a mad scramble begins after originals. Especially those by Wesso and Paul, of whom many believe to be the top artists today.

Your donating these originals to the auction (which even spells the monetary success or failure of a Convention) and your advertising in the Program Booklet all helped immensely to put this 1940 party over in a big way!

Again let me thank you.—P. O. Box 260, Bloomington, Ill.

Thanks for the big Venusian orchids, Bob—and thanks to all of you S-F fans. If it weren't for you swell members of the crew there wouldn't be any reason or profit in publishing scientific fiction magazines.

Or fun, either.

—SERGEANT SATURN,
the Old Space Dog.

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(Continued from page 115)

But orders were orders, as they always were and always will be, as long as there are navies. On we went, and Blakston's fleet followed, taking up positions behind us. We went forward to give battle.

And that, gentlemen, was a *battle!*

WE dropped down to within two miles of the rim of Copernicus and opened up with everything we had. The other ships, the *Vermont*, *New Hampshire*, *Connecticut* and *Rhode Island*, were grouped behind us, on the same plane. So the fleet formed a circle perhaps ten miles in diameter. From reports, I knew that Blakston's fleet was tearing around above us, but we couldn't see them. We barely drifted along, our landing rockets blasting like mad to keep the heavy tub from dropping right into the crater.

As gunnery officer, I was too concerned with our own marksmanship for the first few minutes to worry how the Martians were doing. Our massive guns and bombs tore the Martian base to shreds. It didn't take me long to realize that at least that much of our mission would be carried out.

"Still think I'm a doddering old fool? Nottingham roared in my ear, pointing to the carnage below.

"Hell, no, sir," I grinned uneasily. "But I can't understand why the enemy hasn't scored on us. We must be perfect targets, hanging around up here."

"Oh, they have," the old man replied unconcernedly. "But not as much as I expected."

I glanced at the leak detector panel and grabbed onto my gun for support. The *Maine* had been pierced twenty-five or thirty times! Even while I looked, two more red lights flashed on.

The other officers in the *Maine's* control room were half hysterical, but not with fear. For all we knew, old Nottingham was working black magic. Whatever it was it worked. We were cleaning out that Martian nest in spite of their land batteries.

(Continued on page 128)

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(Continued from page 127)

Then the Martian fleet hove in sight. Their desperation was apparent all right. They slowed to complete visibility to engage us, although that left them wide open to Blakston's ships above. But they didn't do any better than the base.

Our six-inch guns absolutely knocked them back into space. Oh, I admit they did manage to send the *New Hampshire* crashing down into the crater, and a few minutes later the *Connecticut* dropped out of formation, though she made a safe landing in the base. But what the hell did that matter? The Martian ships couldn't stand up to our fire! Their commander finally realized this and they disappeared into the void, hotly pursued by a squadron of Blakston's fleet.

The first thing I did, after we had landed and our men had rounded up the Martian survivors, was to inspect the gallant *Maine*. As the leak indicator showed, the old hulk was pierced through and through. Naturally every pierced cell held its crew of dead. Their lives had been snuffed out when their air rushed out into space. Standing outside the ship, I followed the course of one shell through cell after cell, from one side of the ship to the other.

Then I realized why old Nottingham was not worried about the enemy fire. The *Maine's* walls were so thin, they offered just about no resistance to the projectile. It ripped right through the ship. When it exploded, it was miles beyond us!

I sat down on a hunk of lava and did some heavy thinking. That was when I grew up. I saw that we bright young men didn't know everything. We had gone in for faster and faster ships, and guns with greater and greater range. Finally the very speed of the ships made it impossible for any two to engage, even if the range of their guns had permitted them to close in and fight.

Nottingham, with his hidebound conservatism, had foreseen this. So he had made a damned pest of himself for years to keep his antiquated ships in service. You see, all along he'd known they'd be the answer to the

inevitable stalemate. *They could take it!* And while, they were taking it, they could dish it out ten to one. The Martians had no alternative but to fight against superior armament, or be brushed out of the way.

* * * * *

BRECKINRIDGE stopped and there was complete silence. He felt like Lincoln at Gettysburg.

"I see now, Commodore," Midshipman Sharp breathed, "the value of older men in the Service. They act as a governor on the enthusiasms of us younger men, and check mistakes before they are made. But what has that got to do with history? We are still looking forward, not backward. That's the motto of our class."

"Where do you suppose," asked Breckinridge, "that Admiral Nottingham got the idea that high-velocity, exploding shells would tear harmlessly through an ordinary hull, while they exploded inside an armored one?"

"Why, I imagine it just occurred to him," Sharp answered.

"Well, it didn't," the Commodore stated with ironic satisfaction. "He remembered it. That same thing had happened once before. Admiral David Farragut, at Mobile Bay in eighteen-sixty-four, took his flagship, the steam frigate *Hartford*, right under the guns of a Confederate fort and silenced it. He knew the enemy shells would pass right through the wooden sides of his ship and explode harmlessly beyond him."

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| | | <input type="checkbox"/> Management of Inventions | <input type="checkbox"/> Radio, General | <input type="checkbox"/> Toolmaking |
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